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THE

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OF

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WHOLE SERIES, VOL. XX. THIRD SERIES, VOL. XII.

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Original Communications.

*A CONSIDERATION OF CERTAIN DOUBTFUL POINTS IN THE MANAGEMENT OF ABORTION.**

BY CHARLES P. NOBLE, M.D.,
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There are many problems which come up for solution in the management of cases of threatened abortion, for the proper determination of which all of the resources of the practitioner are requisite. Few cases in clinical medicine make greater demands upon his tact, knowledge, experience, and judgment, for their proper treatment, than cases of threatened abortion. As a contribution to the study of the subject, I shall offer my own views concerning four of the problems which frequently present themselves. 1. When is abortion inevitable? 2. When is abortion complete? 3. After septic abortions, when shall irrigation of the uterus be discontinued? 4. After septic abortions, when shall operation *per vaginam* or by abdominal section be done?

When is abortion inevitable? Every practitioner of experience is aware of the delicate nature of the question as to when abortion is inevitable. Upon its proper solution depends, upon the one hand the chances for existence

*Read before the Philadelphia County Medical Society, Nov. 27, 1895.

of a human being yet unborn, and upon the other hand the well-being, the health, and it may be the life, of the pregnant woman. Unfortunately it is difficult, if not impossible, to lay down hard-and-fast rules to determine when abortion is inevitable. It is currently believed that when hemorrhage occurs from a pregnant uterus, and contractions of the uterus have come on, abortion is inevitable; but I have seen these symptoms subside under appropriate treatment, and the pregnancy go on to full term, with the delivery of a living child and with no ill-result to the woman. In this connection reference may be made to a case reported by Scanzoni, of a woman who was seized with profuse metrorrhagia in the third month of pregnancy. Great numbers of clots were discharged, and, as all hopes of saving the ovum were abandoned, ergot was used in large doses, and tampons were placed in the vagina. After thirty-six hours, a sound was employed to explore the uterus; and finally, as the bleeding continued for three weeks, an intra-uterine injection of a weak solution of perchloride of iron was resorted to. Eight weeks later the patient quickened, and presented the distinctive evidences of a pregnancy advanced to the sixth month.* I, myself, was consulted in a case in which the pregnancy had continued in spite of systematic application to the endometrium of pure carbolic acid, continued over some weeks.

When, in addition to hemorrhage of the uterus, there is a dilatation of the cervix and descent of the ovum, abortion may be considered inevitable. If a portion of the ovum has been discharged, or the liquor amnii has come away, or if septic inflammation has taken place, there is no question that the abortion is inevitable, and under these circumstances attempts to prevent the expulsion of the ovum should not be employed. Especially is it reprehensible to make use of such attempts if the discharges are foul-smelling and the patient is febrile.

The most puzzling cases are those in which moderate hemorrhage takes place from the uterus, unaccompanied by uterine contractions, and when the general condition of the patient continues good. Under these circumstances it is wise to keep the patient in bed for at least some weeks, before employing measures to empty the uterus. I recall very vividly the case of a lady about three months pregnant, who, on her way from church, was taken with a hemorrhage very considerable in amount; indeed, she was fearful that a sensation would be created on the street, and so had her husband walk behind her, lest the flow should be so great as to leave a trail of blood upon the pavement. This patient was kept in bed for some weeks, the hemorrhage persisting in slight amount without other symptoms, and finally ceasing. She was delivered, at full term, of a living child. There can be no objection to temporizing under these circumstances, except that the time of the patient may be wasted through the lack of success of the method employed in preventing abortion. At the same time, too great care cannot be employed lest the persistence of bleeding, slight in amount on any one day, should eventually produce a grave anemia. Also, the temperature should be regularly taken, and other signs of infection looked for, lest an insidious infection should progress sufficiently to become serious before its recognition.

When is abortion complete? The classical maxim that the uterus should be emptied of all portions of placenta and membranes, and also of clots, both after labor and after abortion, is just as true now as when first enunciated. In abortions after the fourth month, there is usually little difficulty in determining whether or not the uterus has emptied itself, because both the fetus and the placenta have attained such size that an examination of them is of value, and besides, an exploration of the interior of the uterus, in case this should be necessary, can, as a rule, be carried out without special difficulty. During the first three months of pregnancy it is not so easy to determine whether or not abortion is complete. During the first two months, as a rule, the question is not of great importance, because nature usually takes care of the abortion without much aid from the practitioner. In certain criminal abortions, when virulent infection of the endometrium has taken place, this is not true; but in these cases other problems present themselves, and the uterus should undoubtedly be explored and thoroughly curetted to remove the infected decidua, so that the mere question of whether or not a piece of the ovum remains behind assumes a relative rather than an absolute importance. It is during the third and fourth months that the practitioner is most often in doubt as to whether abortion is complete or incomplete. Spontaneous abortions, in which the ovum is delivered entire, present

* Lusk, The Science and Art of Midwifery, 1892, p. 319.

little difficulty, as the intact ovum is ample evidence that the uterus is empty. When the fetus and the chorion (or the placenta and membranes) are delivered separately, it is not so easy to determine the question, but an examination of the mass delivered will frequently settle it. If the practitioner only sees the patient after the abortion is supposed to have taken place, if hemorrhage has ceased, and if the cervix has contracted, it is a fair inference that the abortion is complete. Persistence of the bleeding, and a patulous uterine canal, are very reliable evidences that a portion of the ovum is retained.

Unless the ovum be delivered intact, the only absolute evidence that the uterus is empty is that afforded by the finger when introduced into the uterine cavity. When there is any reasonable doubt upon this point, in abortions taking place about the fourth month, especially if the patient is not under absolute observation, it is best to settle the question by exploring the uterus under full antiseptic precautions. This can be done, as a rule, without anesthesia, and always with its aid. Two fingers or the half-hand should be introduced into the vagina, and one finger into the cavity of the uterus—the uterus itself being steadied through the abdominal wall by conjoined manipulation.

After septic abortions, when shall irrigation of the uterus be discontinued? It is universally recognized that in the treatment of abortion when infection has taken place, the uterus must be emptied of all portions of the ovum; and almost all authorities go further and advocate that the maternal decidua should be removed with a sharp curette. Following this thorough curetting of the uterus, douching of its cavity with an antiseptic solution is essential. When this method of treatment is instituted promptly, in a very large percentage of the cases it is followed by the best results. In some cases, however, and especially those in which the treatment has been instituted after considerable delay, the septic processes are not arrested before the infection extends either along the Fallopian tubes to the peritoneum, or through the lymphatics or the veins to the broad ligaments, giving rise either to localized inflammatory conditions in the pelvis, or to general peritonitis, or to septicemia. In this class of cases it is of the utmost importance that too much reliance should not be placed upon the influence of uterine irrigation. Manifestly this can do no good unless it remove septic material from the cavity of the uterus, or assist in disinfecting the endometrium. When the infectious processes have extended into the deeper portions of the uterus or entirely beyond this organ, they are no longer influenced for good by uterine irrigation. I am heartily in accord with those who believe that uterine irrigations are distinctly harmful in all cases in which inflammation has extended beyond the uterus—the manipulation necessary to irrigate the uterus having a distinctly bad effect. My own experience leads me to believe that, if the uterus has been properly cleaned out and douched in the beginning, irrigations are seldom necessary for more than one or two days, and that if continued longer than this they are a source of harm rather than of good.

After septic abortions, when shall operation per vaginam or by abdominal section be done? It is assumed that the abortion itself has been properly treated—by thoroughly emptying the uterus, by carefully curetting the endometrium and removing as much of the maternal decidua as possible with a sharp curette—and that then the uterus has been properly douched, and a pencil of iodoform, containing fifty grains, introduced. If this treatment and subsequent irrigations of the uterus with an antiseptic solution, continued over one or more days, have failed to arrest the septic inflammation, the latter, as a rule, spreads rapidly either along the Fallopian tubes or into the broad ligaments.

The proper management of this class of cases is one of the burning questions of the day; indeed, conditions have not been ripe until the immediate present to properly study this question. Clinical experience has taught what can be expected under these circumstances when the cases are left to nature assisted by non-surgical measures of treatment. A considerable percentage of the milder cases, especially in patients having a vigorous vitality, will recover either perfectly or partially. In a larger percentage, septicemia, pelvic or general peritonitis, acute purulent salpingitis, and acute cellulitis and pelvic abscess, are among the usual results.

In localized pelvic inflammation, either in the Fallopian tubes, the ovaries, the pelvic peritoneum, or the broad ligaments, the methods of treatment proper in the individual cases have been pretty well agreed upon by authorities. Proper regulation of the diet, mild purgation, the use of ice or very hot applications over the hypogastrium, the exhibition of quinine and strychnine, and the use of baths, are methods of treatment ap-

plicable in all cases. Should evidences of pus-formation present themselves, or should indications appear that the localized pelvic inflammation tends to become a general peritonitis or to give rise to septicemia, operation is indicated. Up to the immediate present, abdominal section and the removal of diseased structures, followed by irrigation and drainage, has been the accepted mode of treatment. At the present time the advocates of operation *per vaginam* will insist that this is a proper field for vaginal hysterectomy.

The class of cases concerning the treatment of which there is the most dispute just now, is that in which a septic abortion has been treated in the most approved way, including curetting and douching, and in which, in spite of this treatment and the continuance of douching for one or more days, together with the use of proper general treatment, the patient continues to go from bad to worse. The infection spreads from the uterus to the broad ligaments, or perhaps along the tubes, and the evidences of general septicemia are apparent and growing more decided. In the class of cases in question there is no attempt at the formation of an abscess, but the case tends to become one of general septicemia. It has been proposed to treat these cases by hysterectomy, either abdominal or vaginal, with drainage of the pelvis. Under the conditions laid down, I believe this practice to be eminently proper, and that it promises to save the lives of many who under the let-alone practice of the past would die. It is urged that if this doctrine receives approval, many women with septicemia after abortion will be subjected to hysterectomy without warrant. I doubt this very much, as these patients are so ill that no surgeon will desire to operate upon them, except under the conviction that in so doing the patients' chances for life are increased. The cases coming under this category are those in which the women have been violently ill from the beginning, and who either improve or die within a week after the septic symptoms appear. If operated upon at all, it must be within a few days after the onset of the symptoms.

The milder cases—those in which the type of the septic invasion is less marked and the process tends to localize itself in the pelvis—seldom require operation until the later weeks of the puerperal month. It has been proposed, however, of late, in such cases to open up the broad ligaments from the vagina, and, in cases of localized pelvic peritonitis due to salpingitis, to open up Douglas's pouch from the vagina, and to pack gauze into the region of the tubes, so as to give free drainage for the products of inflammation. This procedure is so new that experience must determine its value. If, as its advocates claim, it will lessen the necessity of sacrificing the sexual organs because of the ultimate results of inflammation, it will be a great addition to the surgery of the diseases of women.

The proper treatment of localized pus-collections in the pelvis, whether of puerperal or non-puerperal origin, is so well recognized that it is unnecessary at this time to discuss the question. The diseased structures must be removed; and in case of broad-ligament abscess, drainage must be employed.

1637 NORTH BROAD STREET.

THERAPEUTIC USES OF MESCAL BUTTONS (ANHALONIUM LEWINII).

BY D. W. PRENTISS, A.M., M.D.,
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AND
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In September last we published* the result of our investigations to ascertain the physiological action of mescal buttons upon man. Soon after the appearance of the article, we received a letter from a gentleman in a Western State, relating his experience in the use of the drug in certain affections. We are tempted to publish the substance of this letter, as the beneficial action of the drug in the conditions mentioned is directly in accordance with what we should expect from its physiological action. We believe, also, that it suggests therapeutic uses for the mescal buttons which are of value. Our correspondent says:

> I use the tincture. I put one-fourth of a pound of buttons (hairy centre being removed) into a jar containing one pint of alcohol and one pint of water, and allow it to stand ten days or two weeks. It is then ready for use, a teaspoonful at a dose, at intervals, as the case requires.
>
> In cramps and gripings, one dose has always brought relief, and stopped pain entirely, until the influence wore off. The first trial was by my family physician upon a patient with colic, who could not take opium in any form, as it made him very sick. The doctor gave him a teaspoonful of this tincture, and it allayed all pain in ten minutes, and cured the attack. That was in 1886, and I have used it for that trouble ever since.

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*THERAPEUTIC GAZETTE, Sept. 15, 1895.

My sister, when very low and out of her head, was using chloral to quiet her, but it failed. The same physician used this remedy, and quieted her in a few minutes, and she slept well and long, and it seemed to be the turning point in her sickness, as she fully recovered. I have used it in cases where it has produced sleep, but I think the patients were exhausted, and the relief from pain permitted nature's remedy, sleep, to act. In my opinion it ordinarily produces wakefulness. It certainly has a strong quieting action, either in the form of tincture or the buttons.

A piece of the gummy or resinous part in the centre of the button, as large as a pin-head, will stop tickling in the throat (caused by a certain kind of cough) instantly. It never has failed when tried by me; repeat it as occasion requires. A few drops of the tincture on sugar will have the same effect.

The greatest accomplishment of this remedy was in a case of softening of the brain, of a year's progress. The man, large and strong physically, failed in his mind entirely, and believed that his wife was trying to kill him; he would not lie down without a flat-iron under his pillow as a weapon. He had two men and one physician with him all the time for several days. The two physicians—the one already mentioned, and his brother—began the use of opium to quiet him on Thursday at noon, using paregoric first, then laudanum, then morphine, until Sunday noon, without effect for the better; and as a last resort they tried this tincture. The man would not take any medicine except from the older brother; at 2 P.M. Sunday the latter gave a teaspoonful, leaving directions for the patient to take a dose every hour until he returned at 6 o'clock. On coming back he learned that no medicine had been taken since he left at 2. He then gave a dose every half-hour until 9 o'clock (three hours) and another at 10. At 10.30 the patient broke out in a gentle perspiration, went to sleep, and awoke at 7 o'clock Monday morning, rational and in good shape physically; and left the next day for Central Texas, his former home. Lived a few months, as the disease continued to progress, as such cases do, until death came.

My wife used to take it for nervous headaches, and it always relieved her. She has them so seldom now, and dislikes the taste so much, that she does not use it.

One can feel its effect as a stimulant almost instantly in either form—buttons or tincture. I have heard it said that it will clear the system of the effects of a drunken debauch, but do not know whether this is true. I have never taken enough to feel its influence as an intoxicant, as one dose, so far, has always relieved my pain. My experience is that it leaves one in normal condition and fresh as after natural sleep; no depression whatever.

While it is undoubtedly true in some cases, that the action of a drug when given in health is somewhat different from that of the same drug when administered in diseased conditions, it is nevertheless a fact that in the case of new remedies the results of physiological investigation indicate to us the possible therapeutic uses of the drug in hand. The fact will also commend itself to any one, that after a drug has been used for a period of years in certain conditions, with beneficial results, especially when the use of the drug and the results obtained are in accordance with the result of physiological investigation, the advisability of more extended use in the same and similar conditions is worthy of serious consideration. That the results obtained by the writer of the letter which we have given are in accordance with the physiological action of the drug, may be seen from the following summary* of our experiments upon man:

"The production of visions is the most interesting of the physiological effects of *Anhalonium Lewinii*. The visions ranged from ill defined flashes of color, to most beautiful figures, forms, landscapes, dances—in fact, there seemed to be absolutely no limit to the variety of visions which the drug could produce. They could in but few cases be seen with the eyes open, but upon closing them an ever-changing panorama appeared. The predominating feature of the visions was the color effects, although the figures, forms, etc., were in themselves sources of pleasure and admiration. Drumming, or otherwise marking regular time, enhanced the beauty and variety of the objects seen. In two cases the visions were under control of the will, and in one case they were subject to the suggestion of others. The amount of pleasure derived from the drug seemed to vary inversely with the amount of muscular depression present. The effect of the drug in the production of visions is in all probability due to stimulation of the centre of vision in the brain. The persistent ache and feeling of exhaustion in the occipital region, which was present for several days after Experiment 4, is of interest in this connection.

"In some cases no effect whatever was produced upon the reason or will of the individual. In others there was some slowness of thought and loss of power of expression, and in Experiment 2 a marked delusion. Compared with other intoxicants, however, the effect upon the mind is extremely slight.

"Dilatation of the pupil was well marked in every case, and persisted for from twelve to twenty-four hours after the drug was taken. The dilatation was accompanied by a slight loss of the power of accommodation, and consequent disturbance of vision.

"More or less depression of the muscular

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*THERAPEUTIC GAZETTE, Sept. 15, 1895.

with a fire blazing in the centre. The exercises open with a prayer by the leader, who then hands each man four mescals, which he takes and eats in quick succession, first plucking out the small tuft of down from the centre. In eating, the dry mescal is first chewed in the mouth, then rolled into a large pellet between the hands, and swallowed, the man rubbing his breast and the back of his neck at the same time to aid the descent. After this first round the leader takes the rattle, while his assistant takes the drum, and together they sing the first song four times, with full voices, at the same time beating the drum and shaking the rattle with all the strength of their arms. The drum and rattle are then handed to the next couple, and so the song goes on round and round the circle —with only a break for the baptismal ceremony at midnight, and another for the daylight ceremony—until perhaps 9 o'clock the next morning. Then the instruments are passed out of the tipi, the sacred foods are eaten, and the ceremony is at an end. At midnight a vessel of water is passed around, and each takes a drink and sprinkles a few drops upon his head. Up to this hour no one has moved from his position, sitting cross-legged upon the ground and with no support for his back, but now any one is at liberty to go out and walk about for a while and return again. Few, however, do this, as it is considered a sign of weakness. The sacred food at the close of the ceremony consists of parched corn in sweetened water; rice or other boiled grain; boiled fruit, usually now prunes or dried apples; and dried meat pounded up with sugar. Every person takes a little of each, first taking a drink of water to clear his mouth.

After midnight the leader passes the mescal around again, giving to each man as many as he may call for. On this second round I have frequently seen a man call for ten and eat them one after the other as rapidly as he could chew. They continue to eat at intervals until the close. There is much spitting, and probably but little of the juice is swallowed. Every one smokes handmade cigarettes, the smoke being regarded as a sacred incense. At intervals some fervent devotee will break out into an earnest prayer, stretching his hands out towards the fire and the sacred mescal the while. For the rest of the time, when not singing the song and handling the drum or rattle with all his strength, he sits quietly with his blanket drawn about him and his eyes fixed upon the sacred mescal in the centre, or perhaps with his eyes shut and apparently dozing. He must be instantly ready, however, when his turn comes at the song, or to make a prayer at the request of some one present, so that it is apparent the senses are always on the alert and under control of the will.

There is no preliminary preparation, such as by fasting or the sweat-bath, and supper is eaten as usual before going in. The dinner, which is given an hour or two after the ceremony, is always as elaborate a feast as the host can provide. The rest of the day is spent in gossiping, smoking, and singing the new songs, until it is time to return home. They go to bed at the usual time, and are generally up at the usual time the next morning. No salt is used in the food until the day after the ceremony.

As a rule, only men take part in the regular ceremony, but sick women and children are brought in, and, after prayers for their recovery, are allowed to eat one or more mescals prepared for them by the priest.

The mescal ceremony was first brought to public notice in a lecture delivered by the writer before the Anthropological Society of Washington, on November 3, 1891. About two years ago I brought back to Washington a large quantity of the mescal, for the purpose of having it analyzed and tested in order that the results might be incorporated in the final monograph to be published by the Bureau of Ethnology. The chemical analysis was entrusted to Prof. H. W. Wiley, of the Agricultural Department, by whom the work was assigned to Mr. Erwin Ewell of the chemical force. The experimental test was undertaken by Dr. D. W. Prentiss, medical lecturer in the Columbian University at Washington, with the collaboration of Dr. Francis P. Morgan and the efficient assistance of Mr. John W. Mitchell, who offered himself as a subject. The first results of this work were published by Drs. Prentiss and Morgan in the THERAPEUTIC GAZETTE of September 15, 1895, and the indications are that the final result will be an important addition to our materia medica list. Partial analyses, together with some experiments upon small animals, were made by a German chemist, Lewin, as early as 1888, and by Heffter in 1894.

Briefly stated, it may be said that the Indians regard the mescal as a panacea in medicine, a source of inspiration, and the key which opens to them all the glories of another

world. They consider it particularly effective in hemorrhage and consumptive diseases. For this reason the returned students from the East, who almost inevitably acquire consumption in the damp eastern climate, are usually among the staunchest defenders of the ceremony, having found by experience that the plant brings them relief.

A marked instance is the case of my Kiowa interpreter, Paul Setkopti, a man now forty-two years of age. Twenty years ago, at the close of the last unsuccessful outbreak of these tribes, he was one of sixty warriors sent as prisoners of war to Fort Marion, Florida. Here, being young and unusually intelligent, he attracted the notice of a benevolent lady from the North who taught him English and finally secured permission to take him with her to her home in New York State, where she undertook to educate him to go back as a missionary and physician to his people. But he had already contracted consumption in Florida, and during nearly the whole of his four years in New York he was stretched upon a sick-bed, racked with cough and frequent hemorrhages, until at last, as there seemed no chance for life, he was sent back, at his request, to die among his own people. He arrived completely prostrated; and, being strongly urged by his Indian friends, he ate a few mescals—with such speedy relief from the cough that he continued the practice. That was thirteen years ago, and he is still alive and in fairly good health, although he spits constantly, has occasional hemorrhages, and is not strong enough for hard labor. His mind is keen, however, and he makes an excellent interpreter, faithful above the average. He is a leader in the ceremony, and defends it in eloquent English, because, as he says, the mescal keeps him alive. He never misses an opportunity to be present at the ceremony if he can reach the place in time. It is particularly to be noted that this man, after years of training and education in a refined home for the special purpose of making him a Christian missionary and a physician in his tribe, has become an apostle of the proscribed mescal rite, on account of his personal experience of the virtues of the plant.

On one occasion, when I was present alone in a camp where they were preparing to eat mescal that night, he rode in late in the evening, through a cold drizzling rain, and told me that he had been eating mescal the previous night at a camp about twenty miles away, and hearing that they were going to eat in our camp that night and that I had no interpreter with me, he had come to stay with me and explain the ceremony. I tried my best to get him to go to bed and not to lose two nights' sleep, in addition to the exposure in the rain in his weakened condition, but all I could get for reply was: "I will stay with you." I finally persuaded him to lie down at least until he should hear the drum. On hearing the signal, about 11 o'clock at night, he came into the tipi and bent over the fire to warm himself, when he was seized with such a fit of coughing that it seemed as if his lungs would be torn to pieces. I again tried to persuade him to go back to bed, but he said: "No; I shall eat mescal, and soon I shall be all right." He then took and ate four mescals, stepped into his place, and when it was his turn then and throughout the night sang his song like the others, and came out as fresh as they in the morning, after two consecutive nights without sleep. There was no more coughing after eating the first four mescals.

The Indians frequently use the mescal in decoction, without any ritual, for fevers, headaches, and breast pains, and it is sometimes used in the same way by the Mexicans of the lower Rio Grande. I have also seen an Indian eat one between meals as a sort of tonic appetizer. The habit never develops into a mania, but is always under control.

As to its effect upon age or condition, I have seen a twelve-year-old boy, at his first initiation, eat six mescals and sit through the long night ceremony, without any worse result than a sleepiness which came over him after dinner, so that he slept all that afternoon and night until the next morning. I have seen a tottering old man, who had been a priest of the ceremony for half a century, led into the tipi by the hand like a child, eat his four mescals, and then take the rattle and sing the song in a clear voice, and repeat it as often as his turn came until morning, when he came out with the rest, so little fatigued that he was able to sit down and answer intelligently all the questions I asked. Imagine a white man of eighty years of age sitting up in a constrained position, without sleep, all night long and nearly all morning, and then being in condition to be interviewed.

As to the mental effect of the habitual use of the plant, it may be sufficient to say that the great high priest of the rite among the Comanches is Zuanah, the half-breed chief of the tribe, and any who know him at home or in Washington will admit that there is no more shrewd or capable business man in the

Southwest. On one occasion I was with him when he sat up all night leading the ceremony, eating perhaps thirty mescals. Coming out in the morning, he found two cattlemen awaiting him on important business, which occupied him and his white secretary all that afternoon; next day he was up before daylight ready for an early breakfast before starting for Texas to conclude the deal. This after eating a large quantity of the cactus and losing a night's sleep; and Zuanah is entirely too smart a man to attend to business when his brain is not in working order.

On every occasion when I have been present at the ceremony I have carefully observed the participants, sometimes as many as thirty at a time, to note the after-effects, but have seen no indication of a reaction that day or afterward. They unanimously declare that there is no reaction; which agrees with my own experience. After sitting twelve or fourteen hours in a constrained position, each in turn enacting his part several times in the course of the night, and eating from ten to possibly fifty mescals apiece, they come out bright and cheerful, eat their dinner with good appetite, and afterward sing, smoke and gossip until it is time to return home. There is no sign of fatigue or any abnormal physical or mental condition, unless it be the tendency to continue singing the songs in an undertone and beating time with the finger for a rattle for hours afterward. I am unable to say whether this is the effect of the plant or is due to pure fondness for the songs; probably it is a result of both these influences. Once after the ceremony I found myself involuntarily beating time to a song that had particularly struck my fancy. I think, however, that this was largely because I wanted to learn the song, as immediately after coming out from the tipi I had spent some time posing and photographing the company, which I could hardly have done without full control of my faculties and movements.

I know from experience that the mescal is a powerful stimulant and enables one to endure great physical strains without injurious reaction; in which respect it seems to differ from all other known stimulants. During my first all-night attendance at the ceremony I ate none, as I did not feel sure that I could keep my brain clear for observation otherwise, and the result was that from cold, numbness and exhaustion I was hardly able to stand upon my feet when it was over. Since then I have always taken three or four, and have been able to take note of all that occurred throughout the night, coming out in the morning as fresh as at the start to make pictures of the men, afterward writing, reading, or talking with my friends until bedtime. I have never felt the full mental effect of the plant, having eaten only small quantities at a time, and keeping my mind constantly tense and alert for observation. I am probably also less sensitive to such influences, from long familiarity with Indian ceremonies. I have experienced enough, however, to be satisfied, that what the Indians say of the mental effect is true.

The largest number of mescals that I have eaten at one time is seven. The taste is extremely disagreeable and nauseating, and a greater number would probably cause me to vomit. The Indians say this usually happens on first eating the plant, but not afterward. I have seen it happen only on one occasion—in the case of two Kiowa soldiers who had recently returned from three years of army life and rations. They had each taken fifteen or eighteen mescals, and after vomiting returned and ate several more before the close of the ceremony.

The Indians say that no mental effect is produced by less than ten, which is probably true of the seasoned initiates. From twelve to twenty is a common number for one person in the course of the night, and many have eaten thirty or more on occasions. The man with the highest record among the Kiowas is said to have once eaten more than ninety at a single sitting, or nearly a pound and a half. I do not vouch for this, but believe it possible, as he is a recognized leader in the ceremony and powerfully built. The Indians themselves, however, admit that such a quantity is excessive and extraordinary. I have myself seen this man chew up ten, one after another, like so many lozenges, without pausing. I have never heard of any serious results from over-indulgence, and it may be that vomiting relieves the stomach in such cases.

The psychologic effect is perhaps the most interesting, as it certainly is the most wonderful, phenomenon in connection with the plant. Much of this is undoubtedly due to the ceremonial accompaniments of prayer and song, the sound of the drum and rattle, and the glare of the fire. The psychologic measure of these accompaniments can be gauged only by observation of the ceremony, but from the results of the recent experiments and from other testimony in possession of

the writer it is evident that marked psychologic effects are produced by the plant itself without any of these aids. There is a visible increase in the power of the songs after the midnight ceremony. The neophyte is constantly exhorted not to allow his eyes to wander, but to keep them fixed upon the sacred mescal in the centre of the circle.

In some of the experiments noted by Drs. Prentiss and Morgan, the subject had more or less of horrible visions and gloomy depression. As such feelings are entirely foreign to my own experience or to that of any Indian with whom I have talked, it may have been due to fear of the result. It must be remembered that the Indian is familiar with the idea from earliest childhood, and comes to it for the first time with his mind filled with pleasant anticipation. On the other hand, Drs. Prentiss and Morgan state that in nearly every case the pulse of the subject was abnormally high from excitement, even before beginning to eat. Lumholtz experienced only a nervous, wakeful effect, followed by depression and chill, after drinking some of the decoction as the Tarahumaris prepared it.

In all experiments we must consider also the difference between the Indian life, with its comparatively regular routine and freedom from worries, and the civilized life with all its stress of thought and irregularities of habit. The Indian eats on Saturday night in order that he may rest and keep quiet on Sunday, while in several of the medical experiments the patient seems to have hastily swallowed a sandwich and plunged at once into exciting action.

THE TREATMENT OF VESICAL CALCULUS IN YOUNG CHILDREN.

By Francis Patterson, M.D., Philadelphia, Pa.

(Concluded from page 809.)

STATISTICS OF THE CRUSHING OPERATION.

History.—*Lithotrites.*—The credit of the invention of the operation for crushing a stone (though not evacuating all of the fragments at a single sitting) is usually given to a Bavarian surgeon named Gruithausen, who described his operation in 1813, though a claim of priority has been advanced for two Italians who lived in the seventeenth century. The first surgeon to perform this operation on the living subject was Civiale, in 1824. He used the "trilabe"—a drill consisting of a central pin or axis and three claws; this he introduced into the bladder by way of the urethra, when the claws caught the calculus, which was then reduced to fragments by drilling holes in it in various directions. The process was thus one of drilling rather than crushing.

On this model all modern lithotrites have been constructed. In 1831, Baron Huerteloup advocated the placing of the patient on a peculiarly shaped bed, to which a vise had been attached. After the lithotrite had been introduced and the calculus caught within its jaws, the lithotrite was fixed in the vise, and the disintegration of the calculus was accomplished by the blows of a hammer applied to the handle of the instrument.

For the introduction of the "screwing process" we are indebted to Hodson, of Birmingham, while Sir William Fergusson gets the credit for the adoption of the "rack and pinion" system.

Lastly, Sir Henry Thompson adopted the cylindrical handle, which, combined with Weiss's method, whereby the sliding motion may be changed to a screwing one, is the general characteristic of all of the modern instruments.

Evacuators.—In 1845, Cornay brought to the notice of the profession his "litheretie," and thus opened the way for the invention of many ingenious forms of evacuators that have done so much towards placing litholapaxy on its present high plane of perfection. This consisted of a glass bulb, to which was attached an air-pump. The bulb was filled with liquid and attached to a two-way catheter, thus making it possible to alternately inject and empty the bladder, on the principle of pneumatic aspiration.

This apparatus differs but slightly from that of Sir Philip Crampton, of Dublin, who, one year later (1846), invented his evacuator —a large soda-water bottle, which, when exhausted of air, was applied to a catheter previously introduced into the bladder.

Then Clover designed his syringe—an india-rubber bulb and a glass reservoir, from which water was alternately pumped into and withdrawn from the bladder through a catheter.

Next came Fergusson, who tried to complete the operation at one sitting by bringing away the fragments while they were still retained within the jaws of the lithotrite. Needless to state, this method of procedure was soon abandoned, on account of the danger of producing a laceration of the urethral mucous membrane, besides causing cystitis in nearly every case.

Finally, in 1878, Professor Bigelow, of Boston, announced his famous discovery, and so made litholapaxy possible. To him and Dr. Fessenden N. Otis, of New York, must be given the credit for placing this operation in its present high position, Otis having supplied us with the proper estimate of the capabilities of the urethra as to size and power to take larger calibred instruments than one would naturally suppose, while Bigelow has shown that the bladder is tolerant of long manipulation, and thus opened the way for the immediate evacuation of the fragments.

Since its introduction in 1878 this operation has been performed many times, and a glance at the following statistics will show how great is its success:

Name of Operator.	Number of Cases.	Deaths.	Mortality. Per Cent.
Keegan*	175	4	3.0
Freyer*	152	2	1.3
Dennys*	71	3	4.2
Goldsmith*	52	2	3.8
Gimlette*	59	1	1.6
Hendley*	44	3	6.8
Cunningham*	24	..	...
Caldecott †	38	..	...
Cabot ‡	241	4	1.6
Fenwick §	106	1	.9
Norfolk and Norwich Hospital ‖	251	7	2.2
Total	1213	27	2.22

Thus we see that out of twelve hundred and thirteen cases there were only twenty-seven deaths, giving the small mortality of 2.22 per cent.

STATISTICS OF THE CUTTING OPERATIONS.

Lithotomy, or the operation for the removal of a calculus by cutting into the bladder, is the remaining resource in those cases in which litholapaxy has been tried and has proved a failure.

The surgeon has the choice of one of two operations—(1) perineal lithotomy, and (2) supra-pubic lithotomy (or the "high operation").

The first of these, as compared to the other, is, as a rule, to be preferred, on account of its greater safety and lower mortality; while the latter, on account of its high mortality (twelve per cent.), is only justified when the stone is of such size that its removal by litholapaxy or through the perineum is impossible.

STATISTICS OF PERINEAL LITHOTOMY.

Name of Operator.	Number of Cases.	Deaths.	Mortality. Per Cent.
Keelan*	87	..	...
Thompson †	1028	68	6.61
Cabot ‡	355	11	3.1
Freyer §	132	..	...
Toy ‖	163	4	2.45
Total	1765	83	4.55

It is to be remembered that Freyer's series of one hundred and thirty-two cases without a death is a most exceptional one, and is the result of a very large experience in lithotomy.

STATISTICS OF SUPRA-PUBIC LITHOTOMY.

Name of Operator.	Number of Cases.	Deaths.	Mortality. Per Cent.
Cabot**	240	29	12
Werewkin ††	24	7	29.16

Sir Henry Thompson ‡‡ estimates the mortality of this operation to be about one death in four cases, while Sir William MacCormac §§ reports one hundred and thirteen cases, with a mortality of 10.5 per cent.

Thus we see that the statistical evidence clearly indicates that the perineal method is the better operation of the two, and, in fact, for a number of years it was the only operation performed on children for vesical calculus.

It is to be remembered that, notwithstanding the excellent statistics of the perineal operation, there may occur complications and sequelæ that cannot well be overlooked, and these form a very strong argument in favor of litholapaxy.

Among these may be mentioned:

1. Failure to Enter the Bladder.—Owing to the small amount of space at his command and to the laxity of the soft parts, the surgeon may work around in the recto-vesical space with the idea that he is in the bladder, as the sensation communicated to the hand is very much the same.

2. Failure to Find the Calculus.—This has

* *Lancet*, May 27, 1893, p. 1250.

† *Indian Medical Gazette*, 1886, vol. xxi, p. 161.

‡ *Journal of the American Medical Association*, Chicago, 1889, vol. xiii, p. 654.

§ *Provincial Medical Journal*, London, 1888, vol. iii, p. 654.

‖ *Journal of Cutaneous and Genito-Urinary Diseases*, April, 1893.

* *Lancet*, London, 1884, vol. ii, p. 313; *British Medical Journal*, 1887, vol. ii, p. 822.

† Practical Lithotomy and Lithotrity, p. 114.

‡ *Journal of the American Medical Association*, Chicago, 1889, vol. xiii, p. 658.

§ Litholapaxy (Modern Lithotrity), 111 Cases, p. 31.

‖ *Medical Press and Circular*, 1886, vol. ii, p. 66.

** *Journal of the American Medical Association*, 1889, vol. xiii, p. 658.

†† *Centralblatt für Chirurgie*, 1890, No. 8.

‡‡ Practical Lithotomy and Lithotrity, p. 148.

§§ *British Medical Journal*, March 19, 1887, p. 2.

happened in the hands of the best lithotomists, and is often unavoidable, for, should the calculus be small, it may have escaped with the first gush of urine following the puncture of the bladder, or, instead of this, the stone may be so encysted that its discovery will be extremely difficult, owing to the small amount of space that there is to work in.

3. Peritonitis.—This is the most frequent cause of death after this operation, and, unless great caution be observed, either a traumatic or a septic peritonitis will be produced. Failure of thorough asepsis during the operation may produce the septic form, while if the surgeon be at all rough in his manœuvres the traumatic variety may be the result.

4. Hemorrhage.—A most annoying complication is hemorrhage, which may be the result of wounding either one of the pudic vessels, the artery of the bulb, or the vessels of the corpus cavernosum. In case the latter be cut, the hemorrhage will most likely prove very difficult to check.

5. Wounding the Rectum.—In case the incision be carried too low, the rectum will be wounded, and in consequence the wound will become infected, thus greatly retarding the progress of the case.

Two most unfortunate and distressing sequelæ that may follow this operation are: (1) impotence or sterility, and (2) incontinence of urine.

Impotence or sterility has undoubtedly been the result of the perineal operation in some well authenticated cases. Thus, Tremaine* reports having performed eighteen perineal lithotomies on boys, all of whom grew up, subsequently married, and only one had issue.

In some few cases incontinence of urine is said to have resulted.

Among the complications of the suprapubic method may be mentioned—

1. Peritonitis.—Of more frequent occurrence than in the perineal operation, though due to similar causes.

2. Infiltration of Wound with Urine.—This may occur as the result of faulty drainage, the urine constantly escaping into the wound, and perhaps leading to a fatal cellulitis.

4. Failure to Get Union.—This may be the result of the infiltration of urine into the wound, and, as a consequence, a fistulous opening may persist for many months.

When the results, sequelæ, and complications of the three operations are contrasted, it seems to be clearly shown that litholapaxy is by far the most desirable procedure.

MODERN TECHNIQUE.

The diagnosis of vesical calculus having been made, the first thing to do is to decide on the date of operation. Children require but slight preparatory treatment, but it is better to give them a milk diet for the twenty-four hours preceding operation, and to move their bowels on the morning of the operation.

The patient, having been thoroughly anesthetized, is placed on a hard mattress, the hips slightly elevated, and the thighs separated so that there is a space of about twelve inches between the knees.

The anesthesia should be complete or else the abdominal muscles will not be fully relaxed, and thus it will be impossible to proceed with the operation.

In case the patient has lately passed his urine, the bladder should be moderately distended with not more than four ounces of tepid sterile water or boracic-acid solution (ten grains to one fluidounce). The operation is usually divided into three stages: 1, the introduction of the lithotrite; 2, the seizing and crushing of the calculus; 3, the evacuation of the fragments,—and these will now be described in detail.

Before beginning the first stage of the operation the surgeon should again assure himself of the presence of the calculus by introducing a sound. If the calculus be not found, the operation should, of course, be abandoned.

Having demonstrated the presence of the calculus, the surgeon should proceed with the first stage of the operation, which consists in:

The Introduction of the Lithotrite.—Having roughly estimated the size of the urethra, the surgeon selects his lithotrite, and takes his position between the patient's thighs or else on either side, standing or sitting, as his fancy may direct. The lithotrite—which, of course, has been thoroughly sterilized, warmed, and oiled—is taken in either hand, as most convenient, and held lightly in a direction about parallel to the long axis of the patient's body. It is then introduced by one hand into the meatus, while with the other the penis is slowly drawn forward over the instrument, which should be allowed to glide in of its own weight, no force being permissible in its introduction. The lithotrite should be held in a vertical direction until the urethral

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* *Journal of the American Medical Association*, 1889, vol. xiii, p. 65.

bulbo-membranous junction is reached, when the handle should be depressed between the patient's thighs, and it will then pass easily into the bladder.

It is to be remembered that the lithotrite is to be withdrawn from the bladder and reintroduced just as few times as possible; also that no force should be used in its introduction.

The lithotrite being now in the bladder, the next thing to do is to proceed with the second step of the operation, which is—

The Finding and Crushing of the Calculus.—There are two methods of finding the calculus: Heurteloup's and Civiale's. Heurteloup's method consists in depressing the base of the bladder with the lithotrite, drawing back the male blade, and then giving the handle of the instrument a tap or jerk, so as to cause the calculus to fall within the jaws. Civiale's method, which is better, consists in alternately opening and closing the lithotrite in every portion of the bladder, thoroughly searching the cavity until the calculus falls within the jaws of the lithotrite, which should then be locked. Before crushing the calculus the lithotrite should be slightly rotated, so as to make sure that none of the vesical mucous membrane is included in its grasp. Having made sure of this last, the lithotrite is brought into the centre of the bladder and the stone crushed by rotating the handle of the instrument. The surgeon, having assured himself that he has thoroughly crushed the calculus that was in the jaws of the lithotrite, continues his systematic search for other calculi or fragments that have been broken off and are of too great size to pass through the evacuator.

Being satisfied that all of the calculus or calculi have been well crushed, the lithotrite is withdrawn and the last step of the operation is undertaken.

The Evacuation of the Fragments.—The surgeon, having decided upon one of the many evacuators at his command, proceeds to introduce the evacuating-tube (which is really nothing more than a hard catheter with a stopcock at one end) into the bladder. The evacuator is then completely filled with boracic-acid solution (ten grains to one fluid-ounce)—air being carefully excluded—and attached to the tube previously inserted into the bladder; the stopcock is turned, and by alternating pressure on the rubber bulb the fluid is injected, the return flow bringing with it the fragments, which, by their own weight, sink into the reservoir below, from which they may be subsequently collected and weighed.

Too much time cannot be spent in making sure that the bladder has been entirely washed out, for, if such be not the case, a cystitis may result, or the fragments may serve as a nucleus for the deposit of calculous material and thus cause recurrence.

The after-treatment of litholapaxy is extremely simple. A poultice should be applied over the bladder for the hours following the operation, the boy should be confined to bed for the next two days on a milk diet, and the urine rendered alkaline by small doses of salol.

The complications that may arise are only two in number, and should they occur are of small moment.

1. A fragment may lodge in the urethra. This may happen as the result of a fragment lodging in the eye of the evacuator and on its withdrawal from the bladder lodging in the urethra. Should this happen, its removal is usually an easy matter. Several years ago I had the opportunity of seeing this accident happen to a patient on whom Dr. J. William White was operating. The fragment was removed without any difficulty by means of a pair of urethral forceps.

2. The lithotrite may become broken in the bladder. This most annoying accident is usually the result of faulty manufacture, or of the employment of an excessive amount of force in an attempt to crush a hard stone. This accident happened to Sir Henry Thompson, but did not lead to serious consequences, as he successfully removed the fragment by an operation on the following day.

Some surgeons have claimed that urethral fever is a frequent sequel of litholapaxy, but with careful asepsis and gentle manipulation it should rarely occur.

SIZES AND PATTERNS OF LITHOTRITES AND EVACUATORS USED IN CHILDREN.

LITHOTRITES.—Many good lithotrites are on the market, and can be obtained of sufficiently small size. Among the best are Bigelow's, Keegan's, Keyes's, Teevan's, Thompson's, and last, but by no means least, Forbes's, which is the very best lithotrite on the market to-day. These different instruments will now be considered.*

Bigelow's.—The distinguishing features of this instrument are its elongated handle,

* My thanks are due to Messrs. George Tiemann & Co., of New York, for their kindness in furnishing me with full descriptions of the following lithotrites and evacuators.

shaped to fit the hand, and made of vulcanite; its method of locking, which is done by a quarter revolution of the cover; and its blades, the female one having a blunted point, while the male blade is deeply notched and provided with a spur to assist in preventing impaction.

Keegan's.—This lithotrite is made by Tiemann & Co. especially for children. It is very similar in every way to Thompson's, which will be described later.

Keyes's.—The handle is round and milled with small knobs to assist in securing a firm grasp. It is locked by a button, one being placed on the upper and one on the lower side of the cover. They may be worked either separately or together. The jaws are completely fenestrated. The cutting surface of the male blade is corrugated.

Teevan's.—The handle is very similar in appearance to Keyes's, except that it has no knobs. The instrument is locked by moving the vertical slide on the upper side.

Thompson's.—The handle is exactly similar to Keyes's, and the only difference is in the method of locking. The locking and changing of the two actions is governed by a screw on the upper surface of the cover.

Forbes's.—This is the best lithotrite on the market to-day. The following synopsis of construction is kindly furnished to me by Mr. John Sims Forbes, its inventor:

Steel Sound.

Thompson's Searcher.

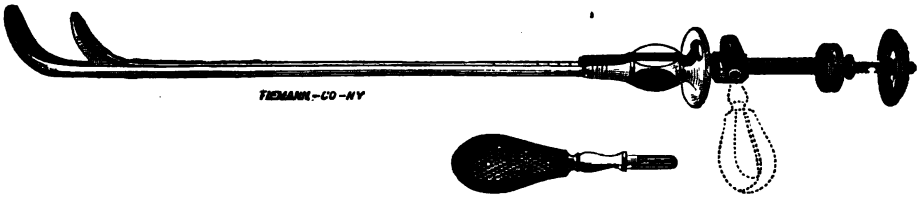
Civiale's Lithotriptor.

1. Designed with the view of meeting, first, the anatomical conditions; second, conforming to the laws of mechanics, special attention being given to the economic disposition of material.

2. Double curve, permitting easy introduction, giving greater strength to the female shaft and jaw, and better support to resist side movement of the male jaw.

3. Elliptic cross-section of the shaft, to give greater breadth of septum, prevent side movement of the male jaw, and be of minimum circumference.

4. The female jaw made flat in a fore-and-aft direction, to take up a minimum amount of room in the bladder.



Fergusson's Lithotrite.

Thompson's Lithotrite.

5. Angular undercut slot or V-groove, to prevent the male blade from rising out of the female shaft and to bind the two closer together under strain.

6. Concave shape of the female proximal surface, to prevent the calculus slipping out, as well as to drive it down to the lower part of the curve and so gain strength for the female jaw.

7. Large clearance between the outside of the male jaw and the inside of the female jaw, to prevent injury to the bladder and impaction.

8. All exposed edges and points of both jaws, male and female, gently rounded to prevent injury to the bladder.

9. All internal corners rounded to avoid starting cracks.

10. Shape of the male proximal surface strategic,—*i. e.*, best adapted to more easily penetrate a calculus, to keep fragments from flying, and to clear itself, to prevent impaction.

11. Plea for the slow thread (strain on the instrument and work done by operator reduced to a minimum, and time gained).

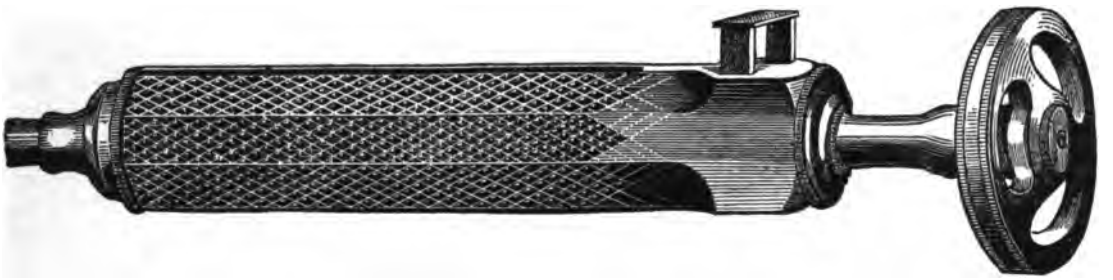
12. Plea for the large screw-handle; it is not too large, because few men can break an instrument with it; moreover, the instrument as constructed will break any calculus before it is injured itself. Metallic, hollow, and very light.

13. Interrupted screw-mechanism. It is stronger, less complicated, and easier to operate.

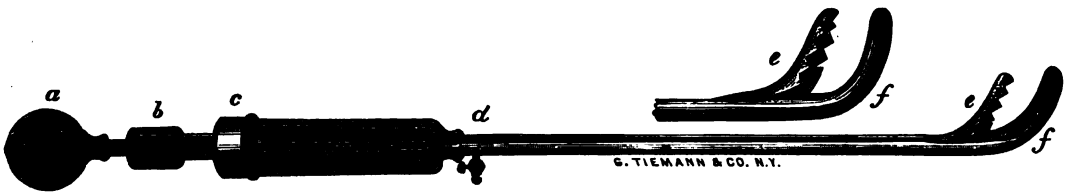
14. Cylindrical handle, similar to Bigelow's, and of proper size to allow of holding tightly.

15. Power-recording mechanism in screw-handle, to measure strain on lithotrite and crushing resistance of calculus.

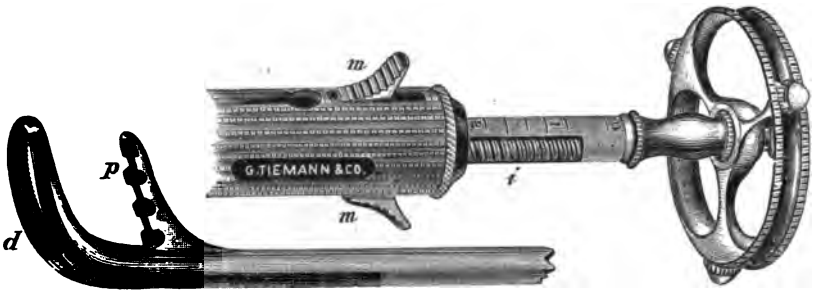
16. The size of the instrument is one and



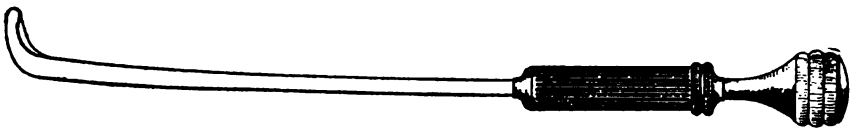
Handle of Teevan's Lithotriptor.



Bigelow's Lithotrite.



Keyes's Lithotrite.

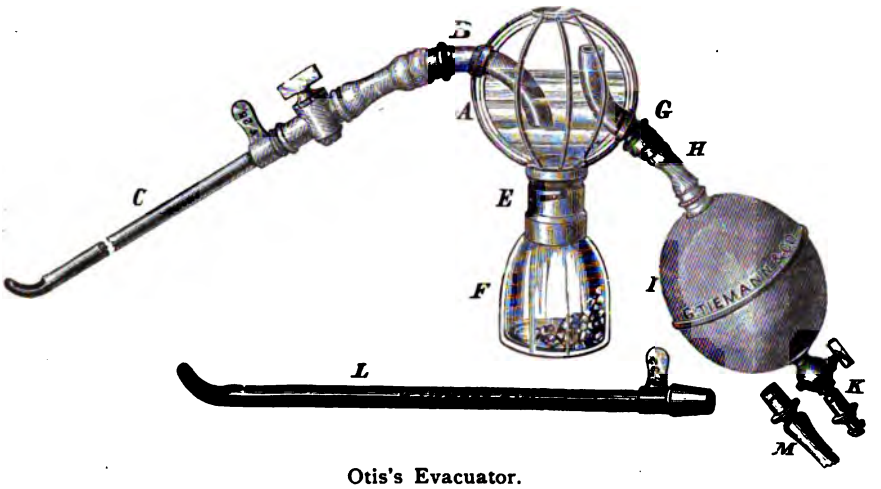


Forbes's Lithotrite.

three-quarter inches shorter than the Bigelow of equal calibre and opening, and five-eighths of an inch longer than Thompson's of equal calibre and opening.

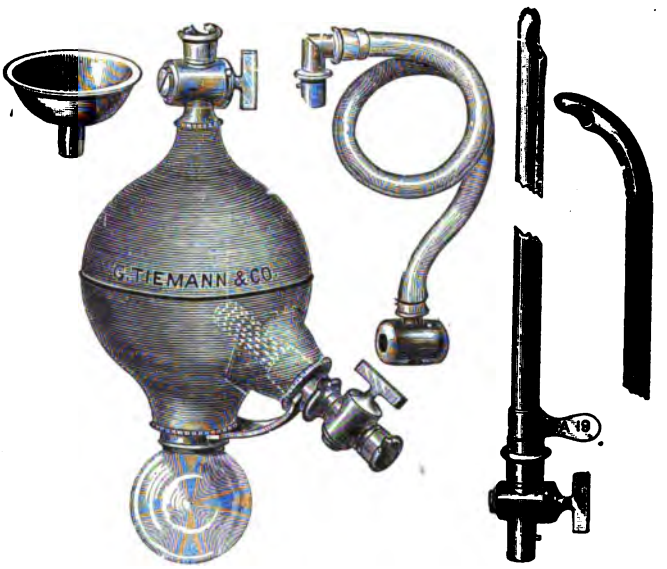
17. The weight of this instrument is the same as Bigelow's and a trifle more than Thompson's of equal calibre and opening.

Thus we clearly see how great the advantages of this instrument are as compared with other makes.



Otis's Evacuator.

Sir Henry Thompson's latest Evacuator, modified by Weiss.



Bigelow's Evacuator.

EVACUATORS.—The three best known evacuators on the market to-day are Bigelow's, Otis's, and Thompson's. Though differing somewhat in construction, their principle of action is similar.

Bigelow's consists of an elastic bulb, a glass receiver, and a tube, fitted with a stopcock, to attach to the evacuating catheter, which is previously placed in the bladder. Within the bulb is a strainer, to prevent the return of fragments to the bladder.

Otis's.—This consists of a glass bulb, to the under surface of which is attached a short bottle, which is the reservoir. Into the side of the bulb a metal tube is inserted, the end of which is for attachment to the evacuating catheter. Directly opposite this another metal tube leaves the bulb to be attached to a flexible tube, to which is attached an india-rubber bulb, which furnishes the power.

Thompson's consists of a metal cylinder, to the bottom of which is attached a glass bulb to receive the fragments. Two tubes leave the cylinder—the one in front for attachment to the evacuating catheter; the other behind, to the india-rubber bulb, which furnishes the power.

It seems, after due consideration of the merits of these evacuators, that better results are to be obtained by the use of Bigelow's, which, in practice, seems to be the best instrument.

CONCLUSION.

After a careful consideration of the statistical evidence that has been presented of the various methods of treatment of vesical calculus in children, it seems clear that litholapaxy is by far the best operation, for the following reasons:

1. It has a lower mortality. Of course, this is the first thing to be considered in any operation, and as that of litholapaxy is only a little over two per cent., while the perineal operation has a mortality of over four per cent. and the high operation one of over twelve per cent., litholapaxy should be given the preference.

2. It is attended by fewer complications than the cutting operation. How much greater the risks of the cutting operation are as compared with the crushing method, has already been alluded to in previous chapters, so the latter method should be given the preference *per se.*

3. There is no danger of emasculation. As already pointed out, this is one of the dangers of the perineal operation and cannot well be disregarded.

4. Period of Convalescence Less.—Mr. Keegan* has found, as the result of his large experience in the Hospital of India, that from fifteen to seventeen days were required for the healing of the wound after lithotomy, while the child was usually perfectly well two days after the crushing operation, and was confined to the hospital for the following three days only for purposes of further observation. Allen,† of Ohio, has had practically a similar experience. He found that 17.6 days was the time required for convalescence from lithotomy, while litholapaxy only took 5.7 days.

5. No Danger of the Formation of a Urinary Fistula, and its Constant Danger and Annoyance.—If the drainage be bad or the vitality of the parts be low, this unfortunate condition may follow lithotomy, perhaps eventually causing death by peritonitis. This is a great danger, and therefore a strong argument in favor of litholapaxy.

**Lancet*, London, 1886, vol. ii, p. 1168.

†*Journal of the American Medical Association*, 1889, vol. xiii, p. 65.

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UNUSUAL IRRITATION FOLLOWING THE LOCAL APPLICATION OF IODOFORM.

BY J. ABBOTT CANTRELL, M.D.,

Professor of Diseases of the Skin in the Philadelphia Polyclinic and College for Graduates in Medicine; Dermatologist to the Philadelphia Hospital, the Southern Dispensary, and the Frederick Douglass Memorial Hospital, Philadelphia.

The following case presented itself at my clinical service on the 16th of October, 1895, and as it exhibited somewhat unusual symptoms I give it for what it is worth:

Male, aged forty years, presented himself at the clinical service of the Philadelphia Polyclinic, showing several spots of syphilitic ulceration upon the right forearm. The larger lesion occupied the greater portion of the extensor surface in its upper two-thirds, while the smaller was located directly above the styloid process of the radius, and was about the size of a nickel five-cent piece. The man, following his own judgment in the treatment of these conditions, applied an ointment of ordinary zinc oxide which carried a portion of iodoform. This was prepared by some druggist of his acquaintance, and the proportion of the irritating remedy could not be ascertained. After applying the ointment frequently during the three days before his visit to the clinic, he noticed that the parts were worse than before this application, and consequently became frightened, thus giving us the opportunity of witnessing the condition. Upon close examination the larger patch was found to show a slight inflammation around its edges, while the centre, which was the cicatricial condition left after former ulceration, presented a higher grade of inflammation, which was evidenced by the formation of small and large vesicles or blebs which had not ruptured. The whole patch showed the peculiar redness indicative of syphilitic infiltration.

The lower and smaller patch gave the impression of a much greater degree of irritation, and although the ulcer itself was only about the size of an ordinary five-cent piece, the inflammation had extended over an area having a diameter of two and a half inches. The lesions produced by this irritating ointment were vesicles, and of innumerable quantity and closely congregated. They resembled the lesions usually witnessed in ordinary ivy-poisoning, in that the appearance closely approached the boiled-sago grain character of the vesicles of the latter affection. The inflammation intermingling in the patch looked very much like that met with in erysipelas, while that on the edge gave the impression of the same condition to a much greater extent, although the characteristic hardiness of this disease, as well as any tendency to a rise of temperature, was not apparent. These lesions had not ruptured, as a rule, but several had discharged their contents, which were of a somewhat purulent character. The ulcer itself did not show any apparent acquiescence in the condition which surrounded it. To the touch the patch seemed superficial, and there was no apparent tendency to deeper infiltration.

315 SOUTH EIGHTEENTH STREET.

The Therapeutic Gazette

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AND
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SURGICAL AND GENITO-URINARY THERAPEUTICS.

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Leading Articles.

THE TREATMENT OF GALL-STONES.

In the endeavor to render our treatment of gall-stones rational, we naturally study the causes which induce their formation and the manner in which we can expel those stones which have formed before the case has come under proper care or in spite of any preventive measures which we may have attempted. Unfortunately, we are met at the very beginning of our study by the fact that the physiologist and pathologist have not as yet discovered the exact characteristics of the general systemic conditions which underlie their formation; but, on the other hand, experimental and clinical studies have developed a number of facts which are of great value to us. Thus, we now know that there are a number of local causes which distinctly predispose to the formation of gall-stone, and that these causes are very commonly found in that very class in which the systemic tendency to stone-formation is most marked. In the first place, a catarrhal state of the biliary passages favors the formation of gall-stone by providing an excess of mucin, with the aid of which the stone may be built; secondly, this catarrhal state is commonly associated with, or produces of itself, a diminished alkalinity of the bile, whereby the cholesterin becomes more readily precipitated, and at the same time, it would appear, causes the deposition of an abnormal amount of lime salts, brought from elsewhere in the body and passed out through the mucous membrane. This latter fact seems proved by the circumstance that bile itself contains very little lime, and that more lime is found in stones lying against markedly catarrhal mucous membranes than in stones not so situated. So far, then, we have a simple pathological process providing no less than three ingredients of stone-formation,—namely, mucin, cholesterin, and stearate, or some other salt of lime. There are still two other important factors at work,—namely, the systemic state, gouty or otherwise, which tends to stone-formation, and the stasis of the bile in its ducts, because the catarrhal process in the mucous membrane blocks its passage towards the bowel.

Recognizing these etiological factors, it now becomes our duty to oppose them, and we have the following indications to fulfill: 1. By causing a free secretion of bile to produce a rapid flow of fluid, which shall be normally liquid and probably normal in its constituents. 2. By the use of alkalies to antagonize the development of acid tendencies and to aid in the solution of mucus. 3. By regulating the diet prevent those hepatic and systemic disorders which tend to the formation of stone. 4. As catarrhal states are often due to or aided by bacterial infection, to produce intestinal asepsis as far as possible.

The normal secretion and flow of bile is best brought about by exercise of a gentle and wisely directed nature, taken continually and evenly, and particularly those forms of exercise which call into play the abdominal muscles and diaphragm or cause hepatic movements. The chief and best of these is horseback riding, or, if the patient is too feeble for this, massage should be resorted to, the hypochondrium being well but gently kneaded and rubbed daily for a considerable period of time. If the liver seems very torpid, calomel may be given in small divided doses of a fraction of a grain several times a week, or nitro-muriatic acid may be more rarely used. In other instances, where there is reason to believe that the flow is sluggish and the bile not sufficiently alkaline, that catarrh and putrefactive tendencies are present, the administration of benzoate of sodium,

or salicylate of sodium, in 10- or 20-grain doses, will result in increasing the flow, increasing the alkalinity, overcoming the catarrh, and tend to arrest intestinal putrefaction. If the catarrhal process is very marked, chloride of ammonium will act even more satisfactorily. This treatment seems especially valuable when the stones that are passed are very dark in color, indicating that much pigment and little cholesterin is present. In respect to the use of alkalies, the patient should drink freely of those mineral waters which will provide alkaline substances, such as Contrexéville, Vichy, and Kronenquelle, and it is useful in many such cases to relieve any tendency to constipation or duodenal catarrh by the administration of hot Carlsbad water before breakfast daily. In the matter of regulating the diet, all rich or fatty foods are to be prohibited. Meat should be used in moderation, preferably white meats, and green vegetables largely eaten.

The catarrhal condition, associated with marked bacterial infection, as may be evidenced by some febrile movement, is best controlled by the use of turpentine, chloroform, and ether, given internally, and accompanied by the application externally of hot poultices to the hepatic area. These poultices may or may not be fortified by mustard, and when removed should be replaced by a warm pad to prevent any chilling of the surface of the body.

Of the internal remedies just named, turpentine is the most useful, since it liquefies mucus, aids the flow of bile, and is thought by some physicians to cause the expulsion of the stone by stimulating the walls of the ducts, and that it dissolves the stone. Further than this, its continual use seems to prevent the formation of stone. Ralfe states that it is best given as follows:

> Ol. terebinthinæ, ♏v;
> Syrup. acaciæ, f℥ss;
> Sodii sulph. carbolat., gr. xx;
> Spt. ætheris composit., ♏xv;
> Aquæ menthæ piperitæ, q. s. f℥j.
> To be taken twice or thrice a day.

We would prefer adding compound spirit of lavender instead of peppermint-water. If the mixture cannot be retained by the stomach, the turpentine may be given in capsule, and followed by a draught of milk.

Finally, a most important factor in the prevention of gall-stone formation in susceptible persons is the avoidance of exposure and wet, and, if possible, a residence in a sunny climate during winter months.

BICHROMATE OF POTASSIUM IN DYSPEPSIA.

We have from time to time in the editorial columns of the THERAPEUTIC GAZETTE spoken of the various treatments proper for indigestion, or dyspepsia as it is improperly called, recommending recently, it will be remembered, a mixture containing chloral and hyposulphite of sodium, and, still further back, one of nitrate of silver and hyoscyamus. We wish now to call attention to a method introduced by Fraser,—namely, of administering small doses of bichromate of potassium in gastric disorders. The doses which he considers best vary from $\frac{1}{12}$ to $\frac{1}{6}$ grain, taken three times a day upon an empty stomach an hour or so before meals. It is best administered in pill or solution, but in the latter case it is better to add some flavoring substance which will somewhat disguise the disagreeable taste of the drug. Fraser claims that pain, nausea, vomiting, and gastric tenderness may speedily be relieved by the use of this drug. In acute gastric ulcer, with vomiting of blood, his experience has not been favorable to its employment, it having no effect whatever upon the hemorrhage, so far as he could determine. In all probability the bichromate of potassium exerts its most desirable effects where an antiseptic influence is desired, as it possesses strong antiputrefactive power. Fraser also believes that it exerts an analgesic action in the stomach. We should be glad to hear from our readers should they, upon trying this treatment, find it of any value.

THE CONTROL OF HEMORRHAGE IN "BLEEDERS."

It is hard to imagine a more shocking discovery for the surgeon than the fact that he has operated upon a "bleeder." The ordinary methods of controlling hemorrhage are of so little avail in these cases as to be practically capable of producing more harm than good, and a minor surgical operation, from which the patient expected to recover in a few hours, may for this reason cost him his life.

There are two methods which we think should be relied upon, or at least tried, under these peculiar circumstances, as they are the only ones, so far as we know, which rest upon a rational basis and at the same time have a certain amount of practical experience to endorse them. One of these is, covering the

involved surface with lint which has been wrung out of a strong solution of alum, or, where the bleeding is from an extremity, to immerse the part in a saturated solution of this drug.

The second and perhaps more promising method is the internal use of calcium chloride for its influence upon coagulation of the blood, as has been chiefly recommended by Wright, of England, who has proved, it will be remembered, that this substance increases the coagulability of blood, not only in animals, but also in man. Thus, he has stopped bleeding and increased the coagulability of blood in his own case and in that of a medical friend, and he has reported several cases of hemophilia in which good results followed the use of it, even although these cases were hereditary hemophilics.

THE INDEX MEDICUS, THE ANNUAL OF THE UNIVERSAL MEDICAL SCIENCES, AND MR. GEORGE S. DAVIS.

The medical profession is to be congratulated upon the fact that a sufficient number of subscribers at $25 a year has been obtained to continue the *Index Medicus.*

Almost the first, if not the first, physician to offer to subscribe $25 a year for the continuance of the *Index*, was Dr. Charles E. Sajous, the editor-in-chief of the *Annual of the Universal Medical Sciences*, who wrote a letter from his office in Paris making this offer and urging the profession to join with him in resuscitating the *Index.* We learn, much to our regret, that some unprincipled book-canvassers have attempted to circulate the report that the *Annual of the Universal Medical Sciences* is in danger of discontinuance, and that Dr. Sajous has been writing letters in a frantic endeavor to keep it on its feet. On the contrary, the *Annual of the Universal Medical Sciences*, which is an invaluable publication, is more appreciated, and therefore in better shape financially and otherwise, than ever before.

It is interesting to note in this connection that on November 30 a dinner was given in Philadelphia to Dr. John S. Billings, one of the editors of the *Index Medicus* and the compiler of the Index Catalogue of the Library of the Surgeon-General's Office, by a large number of prominent medical men from various points throughout the United States, who had subscribed to a purse of $10,000 as an evidence of their appreciation of Dr. Billings's self-sacrificing efforts in the cause of medical literature. After the check had been presented to Dr. Billings in presentation speeches by Dr. S. Weir Mitchell and Dr. Da Costa, several of the other guests of the evening were called upon to make remarks, and in the course of the speech of Dr. Fletcher, who has been a co-laborer with Dr. Billings ever since the War, this gentleman took the opportunity of congratulating those present upon the fact that the *Index Medicus* is to be continued, and in the course of a brief history of its publication emphasized the fact that through the generosity of its present publisher, Mr. George S. Davis, the *Index Medicus* had been maintained for years after the cost of its publication far exceeded the amounts received from subscriptions.

In consideration, too, of the efforts made by Mr. Davis in the past and present for the maintenance of this valuable work of reference, the Société Français d'Hygiène of Paris has elected Mr. Davis a Foreign Associate Member, thus emphasizing the recognition of his services to medical literature.

THE TREATMENT OF INTUSSUSCEPTION.

In a total of 1652 cases of intestinal obstruction, hernia excluded, collected by Lichtenstern and Bryant, 657, or approximately forty per cent., were due to intussusception. All authors are agreed that this form of bowel-obstruction is most frequent in the first year of life. Of Lichtenstern's 593 cases, 131 occurred before the age of twelve months and the great majority of these in the fourth, fifth and sixth months. Other statistics absolutely confirm this. After the fifth year intussusception becomes comparatively rare until the fortieth or fiftieth year, when it again increases in frequency of occurrence.

The comparative frequency of intussusception as the cause of acute intestinal obstruction makes its treatment a matter of very great interest, and it is important to note whether or not recent advances in abdominal surgery have materially modified methods of procedure.

First, as to diagnosis, it is worthy of note that though there may often occur cases in which determination of the exact cause of obstruction is impossible, in general terms, acute obstruction due to invagination is easier to diagnose than that from any other cause, hernia excluded. Pain, vomiting, blood-stained evacuations, often with diarrhea in children, tenesmus, sometimes followed by a patulous

condition of the anus due to paralysis, and tumor, are usually all present. Lichtenstern shows that a tumor can be felt either through the parietes or by rectal examination in more than half the cases. The diagnosis is much more difficult in chronic cases, the symptoms being practically those of intestinal stricture.

The prognosis of the acute cases treated expectantly is extremely bad, Martin and Hare putting the mortality at ninety per cent., Lichtenstern at seventy-three per cent. The usual cause of death in children is exhaustion and inanition; in adults, perforations and resultant peritonitis are of frequent occurrence.

As to treatment, Martin and Hare (Fiske Fund Prize Dissertation, No. 40) close their chapter written five years ago as follows:

"Heretofore abdominal section has been considered as a last resort, to be attempted after days spent in repeated and ineffectual efforts at reduction by small enemata, by air or gas insufflation, by inversion and shaking, by, at times, full doses of purgatives, or pounds of metallic mercury; when the patient's strength was far spent, and inevitable and immediate death was staring him in the face.

"Under these circumstances it is obviously unfair to compare the statistics of operative cases with those treated expectantly, yet the mortality against the surgeon is but little higher (less than two per cent.). Given an equal number of cases treated, on the one hand expectantly, on the other hand by immediate operation, it would be hard to find an abdominal surgeon who doubts that his percentage of success would justify his methods. Considering the class of cases in which section has been employed, any percentage of success would be encouraging; if resorted to when all conditions are favorable—that is, immediately after one thorough effort to accomplish reduction without operation—we believe that the percentage of recovery will be so high that even the most conservative will be disposed to recommend it.

"While it is granted that there are certain cases in which disinvagination cannot be effected, and in which nature frequently accomplishes a spontaneous cure by sloughing, it must be remembered that this form of cure is very rare in young children, and that over forty per cent. of cases thus terminating subsequently perish from the direct effects of the invagination and following necrosis. In those cases where the severity of the symptoms and the amount of obstruction denote much strangulation, and which have not been seen for several days from the onset of the attack, we believe that section should be the first resort.

"Abdominal section, then, should follow immediately upon the failure to reduce. The incision should be over the tumor if one is demonstrable, or, in the absence of this sign, in the middle line of the body, below the umbilicus. The regions of preference should be searched, and, the invagination being found, an effort at reduction should be made; not by pulling upon the intussusception, but by grasping the tumor at its lowest part and, by gentle, continued pressure, reducing the venous congestion; then by traction from above and pressure applied from below, the reduction will be much facilitated. If adhesions have formed about the neck, a probe passed between the entering and returning layer, and carried around the circumference of the bowel, may enable the surgeon to break them up and thus accomplish reduction which would otherwise be impossible. If the adhesions are so tight that restoration of the gut to its normal condition is impossible, we believe that, unless the patient's strength is exceptionally well preserved, an enterostomy and formation of an artificial anus will afford the best hope of recovery, since it has been shown that even where the cause of obstruction is not removed, the relief afforded by this operation frequently enables spontaneous resolution to take place subsequently, with complete restoration of the continuity of the alimentary canal. If gangrene has set in and is involving the intussuscipiens, resection, with the formation of an artificial anus to be subsequently closed by plastic operation, or, in exceptional cases, lateral approximation, will be indicated.

"Of drugs, but two should be used in invagination, namely, opium and belladonna."

In marked contrast to this is the Section on Intestinal Intussusception, representing, according to the index, a brief but sufficient account of additions to the surgical knowledge on this topic brought forward during the last seven years and found in the supplementary volume of the International Encyclopædia of Surgery:

"The most interesting and important addition which has been made to our knowledge of intussusception is the strong plea which has lately been advanced by Mr. Jonathan Hutchinson—a surgeon whose opinions are always to be listened to with the highest respect—in behalf of systematic kneading and manipulation, which he calls abdominal

taxis, in the management of this affection. He records a number of cases in which this mode of treatment proved successful, and urges that taxis for intussusception should be regarded as presenting equal claims to those of the taxis for ordinary strangulated hernia.

" . . . . Hence it seems to me that the taxis should only be attempted in the early stages of intussusception—for instance, during the first four days—or in those comparatively rare cases, such as that above narrated, in which the absence of bloody and mucous discharge shows that the disease is only subacute in character. When the symptoms show that the invaginated part is very tightly grasped, and when the duration of the case renders it probable that adhesions have already formed, it is, I have no doubt, safer to place the patient under the influence of opium and await the possibility of cure by spontaneous separation of the intussusceptum."

Fortunately, however, most surgeons will scarcely accept such statements as representing all that science has lately contributed to the treatment of intussusception.

Rydygier (*Deut. Zeit. f. Chir.*, bd. 42, heft 2, 1895), on the basis of a statistical study of eighty-six cases collected by himself, together with Braun's sixty-six cases reported ten years ago, announces the following conclusions, and with these nearly every surgeon who is willing to accept the results of recent abdominal work will be in accord. They are as follows:

In cases of acute invagination, operation should be performed immediately when one thorough trial of other means of reduction has failed. Having opened the belly, the best method of procedure is to disinvaginate if this is possible without use of great force. If there are certain areas in regard to the vitality of which there is reasonable doubt, these areas should either be kept without the peritoneal cavity or should be walled off from this cavity by iodoform-gauze packing.

When disinvagination is not possible, the intussusceptum should be resected. This is most safely accomplished as follows: a continuous suture is applied to the neck of the intussusception, thus securing the sheath to the gut just above the point where it begins to form the intussusceptum. This suture effectually prevents disinvagination. The suture should bring in apposition perfectly sound peritoneal surfaces. About two inches below the neck a long incision is made in the sheath, exposing the intussusceptum. This cut is made long enough to draw the intussusceptum out through it, unless the latter be extremely large. The intussusceptum is now divided transversely for two-thirds of its circumference. Through this opening is passed the index finger of the left hand, to make sure that the canal is patulous and to render easy proper placing of the next sutures. Four sutures are now passed through the whole thickness of both layers of bowel, the last one being so arranged that it stops bleeding from the mesenteric vessels. The intussusceptum is cut entirely off and delivered through the opening in the gut, or, if this is impossible, is allowed to pass down the bowel or when practicable is extracted through the anus. The longitudinal opening in the sheath is then closed by a Lembert suture.

Rydygier further continues his conclusions with the statement that resection of the whole invagination is indicated when the sheath is so infiltrated or so nearly gangrenous that perforation is threatened; and finally, that formation of a preternatural anus or entero-anastomosis should never be performed excepting in cases of such extreme collapse that no other procedure would be justifiable. In cases of chronic invagination he concludes that treatment should be conducted on general therapeutic principles until acute symptoms have subsided; that the moment this point is reached, *i. e.* in the intervals between acute obstructive attacks, operation should be undertaken, and that when the belly is opened the first attempt should be to disinvaginate,—this failing, resection of the intussusceptum should be the method of choice.

GONOCOCCI IN THE CERVICAL SECRETIONS OF APPARENTLY HEALTHY PROSTITUTES.

KOPYTOWSKI (*Archiv für Dermatologie und Syphilis*, bd. xxxii, heft 3), on the basis of a number of extensive clinical experiments, finds that often after most careful police inspection gonococci are found in the secretion of the cervical canal of women who are pronounced by the police doctors to be absolutely healthy, and that long after the apparent cure of an acute gonorrhea, gonococci still linger in this region. Hence he argues the futility of an examination as at present conducted, and the absolute impossibility of determining without elaborate bacteriological investigations the presence or absence of gonorrheal infection in the case of a woman.

Reports on Therapeutic Progress

LACTOPHENIN: ANTIPYRETIC AND ANALGESIC.

In Sajous's *Annual of the Universal Medical Sciences* (1895), DR. DUJARDIN-BEAUMETZ, editor of the department of Therapeutics (vol. v, A, page 92), gives this estimate of the therapeutic availability of lactophenin:

Lactophenin is allied to phenacetin both chemically and therapeutically. It is a crystalline powder, with a somewhat bitter taste, and is very slightly soluble in water. According to Landowski, who tried it in Proust's clinic, it acts precisely like phenacetin when both are given in 0.6 gramme (9¼ grains) doses, but 1 gramme (15½ grains) of lactophenin produces a decided hypnotic effect. Von Jaksch, who employed it in doses of from ½ to 1 gramme (7¾ to 15½ grains) in typhoid fever, found that it always rapidly reduced the temperature, and also that it exercised a calming effect when there was restlessness or delirium. Jaquet, of Basel, employed it in pneumonia, erysipelas, and influenza, and found it nearly always reduced the temperature rapidly and for some considerable time without any serious symptoms being produced; especially there was never any weakness of the heart's action or of respiration, nor any dyspnea or collapse observed, and the pulse, as a rule, became fuller and slower, while the breathing remained unaffected. The great advantage of this drug appeared to be its calming, hypnotic effect, together with its reduction of the fever. The hypnotic effect of lactophenin, Jaquet estimates as intermediate between that of sulphonal and that of urethane. The usual dose employed by him was from 0.5 to 0.7 gramme. H. Strauss tried the drug as an antipyretic in twenty-five cases, finding it preferable to any other on account of its harmless nature. In typhoid fever it seemed to have a special calmative effect on the nervous system. Roth used it in several cases of acute rheumatism, finding it equal to the salicylates. The pain and swelling disappeared within twenty-four to forty-eight hours, the temperature continued low, and no unpleasant effects were observed, though large doses were given.

ON THE INFLUENCE OF ETHER UPON THE KIDNEYS.

This very important subject is discussed by WEIR in the *New York Medical Journal* of Nov. 16, 1895.

With the increased use of ether as an anesthetic, notably in England and on the Continent, the comparison between its effect and its safety with those of chloroform has been more studied, until now the differences in favor of ether are sharply defined and clearly marked. In 1890 Weir entered the discussion as to whether etherization injuriously affected the kidneys, and presented then a series of forty well observed cases from which it appeared that where the kidneys were previously healthy no disturbance in the renal function was observed in seventy-five per cent. of the cases; or, reversing the statement, that only in about one quarter of the instances a very slight and transitory trace of albumin was found to be present within a few hours after the completion of the anesthesia.

His conclusions, however, were felt to be based on too limited an experience to be of much value; but other and more elaborately conducted observations have only confirmed his impressions. Even before this, Feuter, of Berne, reported conclusions based on one hundred and fifty clinical cases and thirteen experimental observations in animals on ether narcosis. These were:

1. That ether has no perceptible effect upon the healthy kidneys of animals, who, moreover, are more susceptible than mankind to its influences.

2. That it is not dangerous in persons whose kidneys are slightly diseased.

3. That subsequent disturbances in the circulation of the kidneys, when met with, are very transitory and quickly disappear.

The rapid extension of the use of ether in Europe is best shown in the large total presented by Garre of 350,000 cases with but twenty-five deaths (or one in 14,000 exhibitions), which warrants one in digressing a moment to compare this with 134,000 chloroformizations with forty-six deaths, or one death in about 3000 cases. These facts, taken with the careful observations of the actions and complications of ether anesthesia given by Juillard, Poncet, Ollier, and by the German Surgical Association, have placed much that is of interest and of positiveness at our command.

The author then rapidly reviews the main facts to be deduced from the articles of Garre, already quoted, of Angelesco, Wunderlich, Rindskopf, Wood, Bruns, Korte, and others, who have within the past year or two written ably on the subject of ether narcosis.

Butter, in five hundred cases of ether nar-

cosis, found only once albuminuria where previously none had existed. Korte, in the six hundred cases that he collected, only found six instances where albumin presented itself, where before the etherization none had been found, and he states very decidedly that, in his opinion, ether does not aggravate a damaged kidney, but that chloroform does. He also gave seven instances where albumin pre-existed, but was not increased by the etherization. Garre says that in slight pre-existing kidney trouble etherization provoked no important increase in the amount of albumin, and he declares very emphatically that he does not believe an attack of nephritis is at all likely to occur from etherization. This positive view is not entirely concurred in by some of the other observers.

Wunderlich, in a very admirable *résumé* of the subject, concludes that in an already existing case albuminuria is frequently augmented by ether narcosis; that this is twice as common in chloroform narcosis—in the proportion of 11.5 to 6.9 per cent. From chloroform, and much more seldom from ether, casts are to be found—in the proportion of 34.8 to 24.6 per cent. If cylindruria previously exists, from both ether and chloroform narcosis there is an increase to be met with, due, he believes, to an ischemia of the kidney or to a lessened blood-pressure. Casts, he thinks, are due to a direct irritation of the kidney epithelium from the action of the ether or chloroform. He adds, finally, that ether nephritis may be excluded from surgery.

In respect to the renal irritation, Wood asserts that in fifteen animals whose urine was carefully and by various processes tested as to the presence of ether, none was recognized. Yet this same observer admits that etherization in dogs produced cloudy swelling of the epithelium—which, however, he supposes to be due to the general intense congestion by some of the retrograde ether products and not to the ether itself. Wood's conclusions are that if the kidneys be healthy, the action of ether on them does not amount to much; but if they are diseased, the tendency exists to increased irritative processes.

In respect to these investigations of Wood's, the writer alludes to the criticism which Feuter made upon his own experiments upon animals, that animals are much more sensitive to the action of ether irritation upon the kidneys than mankind.

It may not be amiss to call attention to the conclusions of Bruns, lately presented, that some of the bad effects of ether on the lungs and kidneys are due to the oxidation and formation of aldehyde and other products of decomposition caused by the exposure of ether to light, and to the possible mixture of air in the ether-bottles; and he advises, to counteract these dangerous impurities in ether, that it should be enclosed in small, fully filled, light-forbidding flasks, which, until used, should be kept in a cool place. These conditions, it is hardly necessary to be remarked, were and always have been filled in the cans of ether presented to us by Squibb and other ether-manufacturers.

Angelesco has shown, what had been previously taught us by Swain in connection with chloroform, that in ether narcosis the temperature falls from seven-tenths of a degree to a full degree, with the difference that under ether there is a vaso-dilatation of the surface and under chloroform a vaso-contraction.

As perhaps throwing light upon some of the peculiarities and admitted mishaps that occur in etherization, the fact elucidated by Fayer and by Wright might be mentioned—that coagulation of the blood in the smaller vessels and capillaries is very apt to come on with imperfect oxidation. This pertains strongly to the asphyxia or partial asphyxia that we occasionally meet with in etherization.

The conclusions arrived at, therefore, are as follows: That etherization in the vast majority of cases in normal kidneys, and even in abnormal kidneys, brings about no detrimental effects; that when any evidences of abnormality present themselves they are transitory in character and not productive of harm; that elevation of temperature, which he had before thought would aggravate the work of the kidney and bring about, in conjunction with an ether narcosis, abnormal excretions, does not appear to exercise any positive influence in this respect.

CHLOROFORM ANESTHESIA PRODUCED DURING SLEEP.

GURRIERE tells us, in the *Rivista Sperimentale di Freniatria*, that he has repeated the experiments of Dolbeau, the purpose of which was to find out whether chloroform vapors could be administered to a person physiologically asleep, and whether anesthesia could thus be produced without awakening the sleeper. While Dolbeau had experimented upon individuals affected with somatic diseases, Gurriere performed his experiments upon persons who, being perfectly healthy

somatically, had passed through some mental disease but were cured so that their discharge could take place a short time after the date of the experiments.

The technique was: to begin the administration of the chloroform very cautiously; a handkerchief drenched with chloroform was first kept about three inches from the nostrils, then gradually approached; if reflex movements or wiping off the nose with the hand followed, a short interruption was made. The patients were not informed what was going to be done with them; all possible precautions were taken not to make them suspect anything.

The result of the experiments was positive in four cases out of nine examined ones. In one of the five cases with negative result it had been observed that the cause of the failure was probably too light, superficial sleep. The precaution was then taken to give this person, without his knowledge, one-twelfth grain of morphine some hours before bedtime. The chloroform narcosis was then tried again during sleep, and this time successfully, so that actually the result was positive in five out of nine cases.

The narcosis was pushed only so far as to give undoubted evidence that the sleeper was under its influence. Although it could have been done, the author did not want to reach the degree of anesthesia required for surgical operations. The limbs were perfectly relaxed; flapping the body and making noise did not awake the subjects, and only by strong shaking they finally awoke, but next morning did not remember that they had been awake in the night, and had not the least idea that chloroform had been administered to them.—*Journal of Nervous and Mental Diseases*, November, 1895.

SULPHONAL AND TRIONAL COMPARED.

WEBBER compares the action of these two drugs, in the *Boston Medical and Surgical Journal* of May 23, 1895. He points out that sulphonal is sparingly soluble in cold water and is slow in its action. Sometimes as long as two or three hours are required for it to induce sleep. So slow is it at times that patients become impatient waiting for its effect; hence it is better to give it in the evening a short time before bedtime. It is probable that the slowness of its action interferes with the induction of sleep, the patient becoming so nervous waiting for sleep that he is thoroughly aroused. The effect of a full dose, however, continues long, often producing sleep the second night, and in a few cases even the third.

Trional is much more soluble. It produces sleep much more quickly—within a few minutes. In one case the drug was taken before preparing for bed, and its effect was felt so soon that it was an effort for the patient to get into bed. Its action is less prolonged than that of sulphonal. It never produces sleep on the second night as markedly as sulphonal, though patients may sleep well the night after taking it, but not from its direct effect.

The day after taking sulphonal there may be great drowsiness. This is less likely to occur after a dose of trional, and if it does, is much less intense.

In consequence of the more rapid action of trional, some patients much prefer it to the slowly acting sulphonal. This is especially true of those who have difficulty in getting to sleep when they first go to bed. Those who suffer from this form of insomnia become impatient at their inability to sleep, and each minute finds them more restless; indeed, it is in part owing to this restless nervousness that they are unable to sleep, and for this reason they are desirous of seeing an early result from any medicine they take. To such patients it may be well to give trional.

Another class of patients have no difficulty in going to sleep when they first go to bed; but they wake in a short time and lie awake two, three, or four hours, or may have no more sleep that night. To this class sulphonal is the better drug, as it does not interfere with the first early sleep of the night, and acts later, so that the patient does not wake at midnight, as usual.

The effects of trional do not continue so long towards morning as sulphonal. It gives good refreshing sleep for four or five hours, or perhaps six; then the patient wakes and does not sleep again. In such cases it is possible that the next time a larger dose will produce a longer sleep. The effects of sulphonal are more likely to continue through the whole night until morning.

The dose of either of these drugs is 10 or 20 grains. In many cases 10 grains is sufficient, but where there has been obstinate wakefulness it is better to give more—15 or 20 grains. The writer has only very rarely given 30 grains of sulphonal. He has never had occasion to give more than 20 grains of trional; possibly not having tried it in such obstinate cases. In the case of either drug

it is better to give one sufficient dose than two or more insufficient doses.

After taking sulphonal there is not infrequently more or less cerebral heaviness and distress the next day. In a few cases the discomfort has been so great that patients have objected to taking the medicine and preferred to get along with less sleep. The writer has found much less of this unpleasant effect after trional. One patient, who refused to take sulphonal on account of this after-effect, had little or no discomfort after a dose of trional.

After 15- or even 10-grain doses of trional, slight vertigo or dizziness has been felt before sleep was induced, if the patient rose from bed; lying down caused this to cease. This is not the case after the ingestion of sulphonal. It may be well, therefore, to warn some patients not to rise after taking trional, to wait until fully ready for the night before taking it, and then to stay in bed, so as to avoid this unpleasant experience.

Sulphonal may be given in small doses, not more than 5 grains, to quiet restlessness in neurasthenia, hysteria, and mania; given three times a day and, if necessary, during the night, it will often have a most soothing effect. He has not tried trional in this way, but should not expect such an effect, as it acts so much more quickly and its action is so much less lasting.

It will be readily seen from this comparison which of these two drugs should be chosen in combating insomnia; but it must be remembered that neither is a certain cure for this distressing symptom, and that the treatment must be directed to the patient's condition and not simply to the symptom insomnia.

ABSORPTION FROM BLADDER, URETHRA, VAGINA, AND MUCOUS MEMBRANES IN GENERAL, WITH SOME EXPERIMENTS ON THE EFFECTS OF PRESSURE ON THE BLADDER.

This important subject is discussed in the *University Medical Magazine* for September, 1895, by WALSH, who states that on Nov. 27, 1893, Dr. P. Bazy, in a note presented to the Paris Academy of Medicine, in opposition to the almost unanimous opinion of physiologists, asserted that the vesical mucous membrane does absorb—almost as readily, indeed, as the cellular tissue; his experiments were made on dogs and rabbits, with prussic acid, cocaine, strychnine, curare, and pilocarpine. In November, 1894, there appeared in the journal of the Academy an article by Dr. J. Boyer and L. Guinard, impeaching the value of the results obtained by Dr. Bazy; "the impermeability of the healthy vesical epithelium," they write, "is a classic truth that was formerly much discussed, but with regard to which every one is now agreed." Their conclusions are supported by a series of experiments on dogs, which they detail.

The general impression among medical men certainly is that the bladder does not absorb. The reason for the impression can, probably, be best stated in Picard's words, that it would be absurd to think that after nature had provided a complicated mechanism for the excretion of noxious substances from the system in the kidney, she should provide a receptacle for them lower down in the urinary tract through the walls of which it would be possible for them to get back into the system once more. The subject has not been left entirely to *a priori* reasoning, however; a number of experiments have been made, and it is only surprising that a final settlement has not been reached long before this.

As early as 1824 Segalas found, after a series of experiments on dogs, "that absorption of some medicinal substances from the bladder takes place as rapidly as from the stomach." In 1862 Segalas, Jr., repeated his father's experiments on rabbits, and confirmed his conclusions. In 1867 Demarquay, and after him Hicks, from observations on the bladder in morbid conditions, asserted its absorptive power. Later in the same year Thompson denied it.

Bert and Jolyet, before the Société de Biologie de Paris in 1869, announced the results of their experiments on animals. They found that absorption does take place. In the discussion that followed, Claude Bernard and Brown-Séquard expressed agreement with their conclusions. The following year they returned to the subject in a note to the Society, and stated that, after tying off the urethra close to the bladder, absorption did not take place, hence they concluded it was the urethral and not the bladder epithelium that absorbed.

In 1868 Küss did a series of experiments, which were taken up in his laboratory a few years later by Susini and confirmed by him. They injected into the bladders of dogs just dead a solution of ferrocyanide of potassium, and then painted the peritoneal surface of the bladder with an iron salt. No blue staining appeared until from two to six hours

afterwards, unless the vesical epithelium were intentionally injured, when it appeared at once. Curiously enough, it is these experiments that are quoted by physiologists rather than the experiments of Susini, who injected potassium iodide into the bladders of living dogs and failed to find traces of it in the saliva, and who also injected the same drug and belladonna into his own bladder and failed to get either reaction or symptoms.

Alling found, as did Bert and Jolyet, that after tying the neck of the bladder he failed to get absorption, and he, too, attributed the discrepancies in experiments to the fact that it was from the urethra, not the bladder, that absorption took place.

Cazeneuve and Livom made a series of experiments of an entirely different kind. They studied dialysis through the bladder-walls by plunging a bladder full of urine into warm distilled water immediately after the death of the animal, and then testing the water around it after a suitable interval for urea. In bladders experimented upon without delay after the death of the animal, it took three or four hours for urea to pass through, but if the experiment were delayed for a short time the bladder-walls became so altered that urea was found in the water outside in a few minutes. Later, Cazeneuve, with Lépine, found, on ligating the urethra and ureters, that four centigrammes of strychnia injected through a fine canula caused no effect for ten to eighteen hours; symptoms of poisoning then developed, and the animal died.

Ashdown, in 1886, found, in a series of forty experiments on rabbits, that many medicinal substances are absorbed by the healthy vesical mucous membrane. He got absorption of strychnia, eserine, ether, chloroform, morphia, atropia, curare, hydrocyanic acid, and cyanide of potash.

Susini had failed to find iodide of potassium in the saliva; Ashdown, after injecting it into the bladder, carefully turned out a ureter and demonstrated its elimination by the kidneys. In 1892 Guyon and Albaran adopted the opinion that the vesical mucous membrane when healthy is absolutely impermeable. Finally, Duval says that, "from the physiological point of view the vesical mucous membrane is remarkable for its impermeability; it absolutely prevents resorption." He then refers to Küss's and Susini's experiments, and their failure to get a blue color with ferrocyanide in the bladder and a salt of iron on the peritoneal coat. In a note there is reference to Cazeneuve and Livom's observations on dialysis through the removed bladder-walls; these are supposed to prove that absorption does not take place.

Duval's work is looked upon as a classic in France, so that the subject of absorption from the bladder is still unsettled, and another series of experiments may do something toward its solution.

PREVENTION OF UTERINE DISEASE DUE TO CHILD-BEARING.

In the *New York Medical Record* of Sept. 21, 1895, Dr. Gill Wylie gives the following directions for the prevention of uterine disease after childbirth:

On or before the first indications of labor beginning, the patient is given a complete bath, if there is time, or, at any rate, the vulva and vagina are well scrubbed and washed with tincture of green in place of ordinary soap, and the parts washed off with 1:3000 solution of mercury bichloride. The nurse must have on a clean wash dress, and the author puts on a surgical gown; his hands and the nurse's are always washed with tincture of green soap and dipped in a solution of bichloride each time before examining the patient. During and after labor a solution of bichloride, 1 to 3000 or 4000, is used to wash off the vulva. If there is time the bowels are well moved by castor oil, and the rectum always emptied by enema. All instruments used should be sterilized by boiling, and put in a solution of 1:40 carbolic acid before being used. Any hemorrhage is checked by emptying the uterus of placenta or clots, and, if necessary, by ligation of the circular artery when the cervix is torn, or by sewing up the perineum when it is torn. Any tearing of consequence to the perineum is sewed up. After labor, except in cases complicated by severe hemorrhage or lacerations requiring sewing, the patient is made to sit up to pass water or have the bowels move. For a full week the antiseptic napkins or absorbent pads are kept over the vulva and changed every few hours as required by the discharge, and after each act of defecation or micturition the vulva is washed off by means of a Davidson syringe and solution of 1:3000 mercury bichloride. This is kept up faithfully for seven days after labor. On the sixth or seventh day the patient sits up out of bed, and on the tenth day is carefully examined as to the condition of the parts, the character of discharge, position and condi-

tion of the uterus, and to decide if any local treatment is needed to insure normal involution and prevention of subinvolution of the uterus, relaxation of the ligaments, or uterine displacement. No vaginal douches are given after labor, unless instruments have been used to deliver, or hands have been introduced into the uterus, or there is a rise of temperature or an odor to the discharge.

NITRATE OF SILVER IN EPILEPSY.

MURRAY writes to the London *Lancet* for Sept. 21, 1895, as follows:

I have read with great interest the Manchester address and the clinical lecture on "Silver and Epilepsy" by Dr. Gowers. The former is a marvellously lucid exposition of what can at present be known of the intimate physics of life, and it penetrates further into the "mist on the horizon" than anything hitherto produced. I trust that Dr. Gowers will give us another insight into the workings of his mind on this subject. If I have grasped his meaning aright, he thinks—and with reason—that while ordinary muscular contraction is (like the heat given off in ordinary combustion) due to the force set free by the union of carbon and oxygen, which in combining have parted with some portion of their minute motion, and therefore move less rapidly when combined, the amount of energy given off is the difference between the minute motion of the compound and the minute motion of the elementary atoms. He thinks that while the burning of fuel such as coal is comparable to the ordinary contraction of muscle, the violent explosion of more highly combustible matter is comparable to the violent muscular explosion of an epileptic fit.

With regard, then, to the treatment of epilepsy, it is manifest that our efforts must be directed to the removal or hindrance of this tendency to an explosive discharge in the nervous and muscular systems. Without attempting to explain how this inhibited state of the nerve centres is brought about by several remedies, I think I am justified in saying that some of them at any rate do their work by hindering this explosive union of atoms or molecules. One of these remedies —nitrate of silver—offers a fair field for study in this direction. I have often expressed the opinion that a deposit of silver in some form, probably chloride, in the molecules or submolecules of the nerve-cell and fibres so altered the polarity—*i. e.*, the explosive tendency—of the molecules as to arrest the epileptic discharge. And now comes the more accurate and more complete interpretation of Dr. Gowers, who gives us a mental picture of what actually takes place in the action of the nervous and muscular tissues when force (minute motion) is set free. He points out that the susceptibility to nervous and muscular action needs but the influence of a stimulus—*i.e.*, of "added motion"—to bring about a manifestation of the latent energy in these tissues, and that an increase of susceptibility or of stimulus—*i. e.*, added motion—may evoke an epileptic explosion. It seems to me a fair inference to suppose that a remedy which is deposited in the tissues—perhaps irrevocably deposited—may by its chemical inertia interfere by its presence with the minute motion or chemical activity of adjacent atoms and thus prevent their explosive union.

The solution of this question would be materially aided by an inquiry into the nature of the silver deposits. Do they exist permanently in the interior of the body as they do in the exposed parts? They doubtless do exist in some of the mucous membranes—in the mouth, for instance. Are there any changes of color in the nerve-tissues indicating an oxide of silver there? A microscopic, or chemical, or perhaps a spectroscopic, examination would help us to decide this question of silver deposit. As I know of no ascertained facts, I am obliged to fall back on the old-fashioned empirical resource—experience. What does experience teach us as to the use of nitrate of silver in epilepsy?

Experience has taught us two remarkable things: first, that nitrate of silver will cure epilepsy where the bromides have utterly failed; and secondly, that a patient who has subjected himself or herself to a course of silver, producing a deposit, secures a remarkable immunity from a number of small nervous ailments, such as neuralgia, gastric uneasiness with nervousness, etc. I think this latter effect throws a flood of light on the subject and corroborates the view that "the silver blunts the polarity of the nerve centres," renders them stable and less easily disturbed by outward influences, which would come under the head of Dr. Gowers's "added motion." In confirmation of these statements I must produce some "facts," or my theory will fall to the ground.

I submit the following case, which is one of several, in proof of the power of nitrate of silver to cure epilepsy. Twenty years ago I was consulted by the manager of an import-

ant railway department. He had become a confirmed epileptic, suffering from frequent and severe fits. Bromides had been fully tried in large doses by several eminent physicians. Partial relief only was obtained, and that at a great sacrifice of memory and general business alertness (I sometimes wonder whether the mere postponement of fits is worth the serious detriment which the patient suffers in these respects from bromides), and the gentleman was face to face with the resignation of a valuable appointment. I plainly put before him the alternative: Did he mind the leaden tint which would certainly follow a long course of silver, if he got rid of his fits? "Not a bit," said he; "it is a mere featherweight in the balance compared with my present heavy burden." So I put him on nitrate of silver for nine months. He had no fit after the first month of the course, and he has never had one since. His health has been much better—no small ailments,—and he bears me no grudge. I passed him the other day, and he, as he always does, lifted his hat with a grateful smile. This is in severe contrast with Dr. Gowers's patient, who jacketed his medical attendant—but then, poor fellow, he was not cured.

Now, again, a gentleman in easy circumstances has been more or less epileptic for thirty years; he has been a prey to a number of small ailments—muscular twitching, lassitude, frequent lapses of *petit mal*, combining to render his life a burden. He deliberately accepted a course of nitrate of silver, regardless of consequences, and has since reaped his reward. He is seldom out of sorts, is comparatively free from headaches, has no twitchings, and never has a trace of epilepsy, not even *petit mal*.

I might refer to several similar cases, but the above sufficiently illustrate my views. I ought to state that in this latter case the faintest touch of leaden hue was produced, and the patient was not aware of it.

With regard to the effect of nitrate of silver in minor ailments, there is no more striking illustration of it than in those cases of weak and irritable stomachs which are characterized by intense depression of spirits, apprehensions, and failure of pluck or courage. In these cases a remarkable change takes place both in the functions of the stomach and in the tone of the nerve centres of emotions. I will refer the readers of the *Lancet* to an old work, "Johnson on Indigestion," which contains many illustrations of these effects of nitrate of silver. To get the best results in these "stomach cases" the nitrate should be dissolved in distilled water and taken on an empty stomach. I think one gets a distinct local effect on the mucous membrane as well as the more remote effects on the nerve centres by giving it in this form.

I fear my rough notes will stand out in rude contrast when placed beside the refined disquisition of Dr. Gowers, but this result I may claim—that I have given a practical application of his theory, and to some extent may have confirmed his speculative views.

PREPARATION OF ANTI-RABIC SERUM.

There seems to be little fear that for some time to come those who are engaged in the working out of the details of new methods of treatment will, in spite of the fact that they are doing so much, find their occupation gone. Of this we have abundant evidence in the account of the preparation of anti-rabic serum and the method of determining its strength, by Professor Tizzoni and Dr. Cantanni, the conclusion of which appears in the *Lancet* for Sept. 23, 1895. This investigation is of special interest since, should the efficacy of the serum treatment of rabies be proved, new factors become available for consideration and application to the method as a whole, and the scope of the application of the treatment will be enormously increased.

As early as 1889, Babes and Lepp appear to have indicated the possibility of obtaining some protection against rabies by injecting the blood of an animal inoculated against rabies (by Pasteur's method) into one previously or afterwards infected by the virus. Although much work has since been carried out on the same lines, there was little practical outcome from it all until Behring, followed by Roux and Aronson, had worked out the method of treating diphtheria and tetanus by means of antitoxic serum. The experience gained by Tizzoni and his colleagues in the preparation and use of anti-tetanic serum has now, however, been applied to the treatment of rabies by a somewhat similar method; and if all the results recorded are confirmed by fuller and independent observations, there can be little doubt that a great advance has been made in the treatment of hydrophobia. Instead of carrying out the greater part of the preparation of the antidote within the body of the patient by a process of "vaccination," Tizzoni and Cantanni follow the usual plan of preparing this substance in an animal, from which it is conveyed in the blood-serum

to the animal to be treated. In place of using Pasteur's method of protective "vaccination" for the animals from which the serum is to be obtained, they, by a process of peptic digestion, attenuate the virus to be used. What the exact action of this digestion may be is as yet somewhat doubtful; whether it diminishes the activity of the poison-secreting organisms, kills them, or "attenuates" the ferment produced by them, is a subject for careful experiment. At all events, the activity of the virus is said to be so far modified that considerable doses may be injected at a comparatively early stage of the process, and animals that have been so injected withstand the action of the more virulent virus within a comparatively short period. This part of the process is carried out upon sheep, which may be "vaccinated" again and again. These animals always retain a certain immunity, which can be increased from time to time by fresh injections of virus, the activity of the serum corresponding to the amount and virulence of the virus injected. In these points the method of obtaining the serum is much like that by which the tetanus and diphtheria antitoxic serums are prepared. This serum, when mixed in definite quantity in a test-tube with a lethal dose of canine or fixed virus, and then injected into a rabbit, so neutralizes the poison that neither is there any increase in quantity of the virus, nor are the slightest signs of rabies developed, even though the animal be kept under observation for four or five months. More important still, when an inoculation with a lethal dose of the poison is made, a comparatively small quantity of the serum serves to neutralize its effect if injected at once, and even if delayed until the end of the first half of the incubation period the amount required to be given has only to be multiplied some six or eight times. In this respect the serum has great advantages over those used in the treatment of diphtheria, in which the dose has to be multiplied some twenty or one hundred times, and of tetanus, in which the increase of the dose must amount to from 1000 to 2000 times in the later stages of the incubation period. Leaving out of consideration the prophylactic properties of this serum, which could only be of use in the case of those who are constantly in contact with dogs, the success of the experiments as regards early treatment is, from a practical point of view, of very great importance. It is possible, by drying, to prepare a "permanent" form of this serum which will, if kept from air and light, remain active for a long period. It is very portable, is readily dissolved, and may be used by any one who is capable of sterilizing a subcutaneous injecting-needle and syringe. The treatment, therefore, can be commenced almost as soon as the patient has received the bite, as it is not necessary that he should leave his home or his own medical attendant, with the result—if we assume that these experiments are to be fully relied on—that the patient at once receives a quantity of the antitoxic material, which under the Pasteur method could only be manufactured in the body of the patient himself, and then in quantities sufficient to neutralize the infective material (say) after the second half of the incubation period.

One other most important point brought out by these researches is that, just as in the case of tetanus poison, the virus has a distinctly selective action; it seems to exert its full effect on the central nervous system or on some parts of it. Bearing this fact in mind, and injecting the doses of serum in special positions, it is found that it is necessary to inject much smaller doses of the serum under the dura mater of the brain than if the injections are made into the substance of a nerve; while subcutaneous injections require a still larger dose. It is evident that the serum must act in one of two ways: it may act as a direct chemical antagonizer of the virus,—the results of other experiments, however, appear to put this out of court; and there remains the theory that the serum so acts upon the nerve centres, probably the cells, that with its aid they are able to carry on their functions in the presence of even considerable quantities of virulent material. Where the serum is injected subcutaneously a large proportion of the active material is wasted in fortifying cells which do not really need to be protected, whilst the nerve-cells only participate generally in the benefit conferred. When the serum is injected into the substance of a large nerve, the protective agent at once finds its way into the channels which communicate fairly directly with the cerebro-rachidian lymph system, so that a larger proportion of the active protective agent comes into direct contact with the central nervous system. When, further, a subdural injection of serum is made, we have the most direct contact possible; just those parts which are in need of strengthening are brought into contact with the protective material, and the best results are obtained. Tizzoni and Cantanni claim that they have worked out all these different points and that

their results are now beyond question. Allowing for some, or even a considerable, amount of bias in the matter, there would still remain evidence, we think, of sufficient value to encourage them and others to persevere in this work. At present cases come up for treatment which, from the severity of the wounds and the amount of virus left in them, we can never hope to cure by the Pasteur method, valuable as that method is when the cases are brought under treatment sufficiently early, and when the patient does not succumb too rapidly to the virus left when the bite is made. Some of these cases, if the experimental results are accurately recorded, would undoubtedly yield to the serum treatment, especially as that treatment can be commenced with the least possible delay.

One point more must always be remembered when reading this paper and in determining the results obtained and recorded by the authors. Behring, in determining the strength of his antitoxic serum, is able to make artificial cultures of his poison-producing organisms, after which he has only to separate the poison from these organisms in order to obtain a poison of constant strength which has no power of reproducing itself. Tizzoni and Cantanni, on the other hand, are handicapped by the impossibility of making artificial cultures of their rabic virus, whilst, unless the process of peptic digestion or some similar process is carried out before the virus is injected, this material remains capable of reproducing itself for some considerable time after the injection has been made. Altogether, the paper is full of suggestions. Much of the work has evidently been carefully done, and if we cannot accept all the conclusions arrived at it is because the statements are so far-reaching and important that it would be unfair, even to the investigators, to accept them without very full and independent corroboration.—*London Lancet*, Sept. 23, 1895.

MERCURIAL ERUPTIONS.

O. Rosenthal (*Berl. Klin. Woch.*, 1895, Nos. 23 and 24) first mentioned folliculitis as occurring from the external use of mercury. The lesion consists in hard red nodules separated by normal or slightly reddened skin. These nodules may suppurate, owing to secondary infection. Erythema or eczema may result from the local action of mercury. Mercurial eczema may be papular, vesicular, or pustular; it may also be a moist eczema. In severe cases there may be a marked exfoliative dermatitis, of which the author relates a case in a patient aged twenty-one. The mercurial erythema may resemble the rash of measles or scarlet fever; where it results from the local action of mercury, it starts from the site of the inunction; sometimes even minute hemorrhages may occur into the skin; an exudative form, erythema multiforme, has been seen. The most serious mercurial eruption is that resembling pemphigus, of which the author relates a case. Mercurial eruptions have a polymorphic character. The mucous membranes may be affected in the same way as the skin. Mercury administered by the mouth or by subcutaneous injection, etc., may give rise to these eruptions, but not so often as inunction does. The author maintains that under the use of insoluble mercurial salts, mercurial eruptions, stomatitis, salivation, etc., have rather decreased in frequency than otherwise. Other symptoms of mercurial intoxication are rarely present along with the eruption. Besides idiosyncrasy, dose, the kind of preparation, and the sea air, it is said, may predispose to mercurial intoxication. According to the severity of the eruption, general symptoms such as depression, headache, fever, etc., may exist.

TREATMENT OF SNAKE-BITE BY CALCIUM CHLORIDE.

Phisalix and Bertrand, at the Académie des Sciences (*La Sem. Méd.*, June 19), report the result of experiments with chloride of calcium in cases of snake bite. Its therapeutic action is not, as thought by Calmette, due to formation of some substance neutralizing the poison, nor to its entering the circulation and there destroying the poison as it would in a test-tube, but depends simply on its local effect; it destroys the poison locally, causes the tissue to slough, and so prevents absorption of the toxic material. Hence it is concluded that the injections of calcium chloride must be made deeply at the actual spot where the fangs entered, and are useless if made in any other part.

A DISCUSSION ON THE TREATMENT OF MELANCHOLIA.

In an exhaustive article on Melancholia, in the *British Medical Journal* for Sept. 28, 1895, Rayner, of St. Thomas Hospital, states that the primary step in treatment of melancholia is an exhaustive investigation of the patient's history, habits, and environments, and a

thorough examination of every bodily organ, together with the adoption of the best means for the removal or relief of any abnormality. This for the most part falls within the scope of general medicine, and requires no comment. Rayner would specially insist, however, on the necessity of discovering and removing peripheral irritations in the early stages of disorder.

In treating the conditions directly related to melancholia, those connected with functions have practically to be considered before the theoretically primary processes of nutrition. Motor activity constitutes so important a form of expenditure of energy as to need separate consideration; within due limits it is the most potent auxiliary in the restoration of health, promoting assimilation and excretion while affording the greatest amount of diversion of mental attention with the least expenditure of cortical energy. But muscular exertion, when carried to excess, may produce in the nerve centres a condition of exhaustion that cannot be well repaired under the existing conditions of nutrition, and that may be further embarrassed by the toxic products of waste. The old practice of walking a patient about until utterly exhausted to produce sleep was, Rayner believes, harmful in this way. Abstention from exercise is an equally potent factor for good under certain conditions, but does harm when wrongly used, just as exercise does. The question, therefore, to be considered, is not the goodness or harmfulness of rest and exercise, but the conditions under which each is beneficial.

Dr. Batty Tuke, in a recent debate on rest and exercise, advocated rest in bed as advisable in a large proportion of melancholics, and gave some very striking statistics of the result of such treatment. The melancholic state being essentially one of nervous exhaustion and malnutrition, this mode of treatment would commend itself as being rational; but we have to remember that although the muscles may be at rest, the mind may still be painfully active—that rest of body does not include the mental rest which these states specially need. Rest in bed, with isolation, as in the Weir Mitchell treatment, has been found distinctly harmful in melancholic neurasthenics, but such cases have certainly been advantaged by mental diversions. The conditions of the rest in bed have, therefore, also to be considered.

Observation favors the opinion that it is wisest to decide the question of rest or exercise on the merits of the individual case, rather than by any fixed rule relating to the class or form of disorder. Rest in bed may be necessary in cases of great physical weakness or rapid emaciation. In complete insomnia, in sitiophobia, or in acutely suicidal cases, it has been found advantageous. In all conditions, in fact, in which there appears marked depression of the innervation of the organic functions, rest in bed may be prescribed. Sleeplessness, refusal of food, and acute suicidal impulse, all subside more rapidly under this than under any other conditions.

The loss of muscular activity should be met by massage, which should be made as protracted as possible so as to afford diversion of attention to the sensory impressions. The attention should also be diverted and the skin action improved by baths and hydrotherapeutic applications. Mental diversion should be furnished also by reading aloud, music, games, and every means which the mental state, tastes of the patient, and the circumstances admit. Supervision and companionship should be constant, and little of the day should be left without some attempts at diversion of the attention.

The diet requires careful consideration; an excessive diet is commonly indicated, but in some cases even a milk diet is necessary. Great harm has in some cases resulted from excessive feeding when combined with rest.

Rest in bed, with isolation, is indicated in cases of extreme sensory irritability. It is specially contra-indicated in erotic cases and in cases having sensory hallucinations or illusions. The return to activity must be gauged by the subsidence of the special symptoms for which rest was adopted, by improvement in sleep, nutrition, and especially by improved vascular tone. In resuming activities the results of the earliest efforts must be keenly observed, and short periods of activity should be sandwiched in between periods of rest. Relapses constantly occur from too great haste, and nothing taxes the judgment of the physician more than in advancing the patient to that Mecca of the melancholic—a full day in the open air.

The limitation of cerebral function—that is, of cortically developed nervous energy—is the next question for consideration. The mind is more or less active in all conscious states; absolute mental rest is only possible healthily in sleep, abnormally in stupor and similar conditions. To those engaged in most complex mental work a change of subject, even to one equally arduous, in health may

be a pleasure, while change to a less complex or more familiar subject may be an absolute rest. To highly developed minds engaged in complex affairs a change to mathematics or classic translation is a rest and refreshment, while still greater rest, of course, results from occupations which are more and more automatic, or amusements involving mere sensory attention.

The power of persistence of function varies remarkably in individuals, so that both in quality aud quantity of function we find that what is hard work for one man is idleness for another. Regulation of functional output from their point of view is therefore very difficult, and no general rule for guidance can be given.

In pure melancholic states the painfulness of all mental exertion, with other causes, tends more and more to the limitation of intellection and the consequent concentration of attention. In the extreme this is absolutely fixed in the basal, most organic emotion—fear, often expressed in one idea, from which no external impression, however forcible, can for a moment divert the mind. The degree in which the power of attention is affected may offer a good basis for guidance in our efforts to limit and direct functional expenditure.

The quantity of food must often be not only in excess of appetite, but in excess of actual nutritional requirements. In the young this latter limit may be largely exceeded with impunity, but later in life, with defective eliminative power, the quantity of meat food and alcohol has to be carefully regulated. Apart from the toxic resorption in the intestines from undigested and decomposing meat food, the assimilation of a large quantity of meat extractives may introduce an additional toxic element. Alcohol, too, useful in many forms in early life—yet always to be used sparingly,—in later life must be avoided or used only for its stimulant effect at the commencement of digestion; in the later stages it impedes this function. Digestion is not only weakened in power but slowed in process, so that provision has to be made that the food is specially assimilable and is taken at such intervals that the stomach is not kept continually loaded.

With milk or artificially digested food, feeding may be very frequent, but with returning strength intervals of three and a half hours or more should be aimed at. The Kneipp cure is not without its lessons in this respect. In digestibility the food must range from milk or peptonized pancreatized food, to the most *recherché* productions of the cuisine. In quality the food should be rich in fats from milk, cream, butter, and eggs. Albuminous food should be limited in elderly persons, and in this respect quaint old Burton's prescription may be followed. He advises "mountain birds, partridges, pheasants, quails, hens, capons, mutton, kid, and rabbit, with fish that live in gravelly waters, as pike, perch, trout, and also sea fish, solid and white, with plentiful supplies of vegetables and fruit, eaten sparingly, and not overmuch of one dish."

The mode of origin of the abeyance of appetite is worthy of consideration. Does it arise, for example, from peripheral anesthesia from lowered nutrition, from defective transmission of impressions from the periphery, from neural defect, or from toxic conditions affecting the pneumogastric centre, or from combination of these conditions?

Fear, the basal emotion in extreme melancholia, not only reduces excretion, but has been credited with producing toxic results by the arrest of metabolism. Eliminative treatment should, on this view, form the basis of treatment, and is, the author believes, often effective.

The appetite is rarely in excess; toxic conditions and states of arrested digestion are probably the most frequent source of this anomaly. The abeyance of the food appetite, and the consequent avoidance or absolute refusal of food, constitute one of the most important facts common to all states of melancholia. The basis of the objection to food must in all cases be carefully inquired into, in order to exclude such causes as the unaccustomed quality of food or physical conditions of the mouth, throat, or stomach.

When the refusal is undoubtedly of psychic origin, we should not admit even tacitly the truth of the delusive idea by allowing patients to steal their food or to take food prepared for others, etc.; these procedures may save some trouble at the outset, but are productive of greater trouble in the end. When there is not complete control of the patient, such devices may of course be temporarily adopted.

In the minor degrees of refusal, much of the success in administering food turns on the skill of the administrator. Some nurses constantly fail, while others are almost invariably successful; the result probably depends on the skillful diversion of the patient's attention to objects of sight, hearing, and common sensation, as well as to emotion, by sympa-

thetic kindness of manner or facial expression, and to the intellect by kindly talk. Such procedure, with a very moderate amount of force and insistence, will generally prove successful. At times a few drops poured through the nose will be effective.

Every alienist should practice feeding, so as to be able to instruct attendants and to prove in each case the necessity of forcible feeding. The physician should not rely merely on the statement of an attendant, but should verify the condition by observation.

With rest in bed and skillful insistence in feeding, actual forcible feeding by the nasal or esophageal tube may be often avoided. Some observers have insisted that feeding by these means need never be resorted to; but it is better to err on the side of feeding too early and too often than in the opposite direction. Absolute refusal should be met by prompt resort to forcible feeding. This is now pretty evenly divided between the nasal and esophageal tubes. The stomach-pump is now almost universally superseded by the chalice.

At a recent discussion on this subject, opinions were very equally divided, and each method found strenuous advocates. The advantages claimed for the esophageal tube are: the greater rapidity of administration, the power of giving a greater variety of nutriment in a less watery form, and the absence of risk of passing the tube into the larynx. On the other hand the nasal tube has the advantage in cases where there is very determined resistance.

The danger of cultivating the habit of refusal by directing the patient's attention to it is one to be clearly kept in mind; the obstinacy of melancholia makes this a real danger. To avoid this, preparations for feeding should not be made in the patient's sight; active resistance should be overcome by such an amount of force that no struggling or delay can occur, and as little importance as possible should be given to the fact by those engaged in it. The patient's eyes should be closed during the process, which should be conducted with as little talking as possible. The frequency of feeding should be at intervals of not less than three hours and a half, and from two to five times in the day.

It is scarcely necessary to insist on the advantage of adding lime, lemon, orange-juice, or pulped green vegetables, or the advantages of peptonizing and pancreatizing the food, or to direct attention to the danger of too great excess of meat extractives. Pounded meat is always preferable to beef-tea. A due proportion of the various elements of food should be aimed at. The position in which the feeding is administered, and the precautions to be observed in passing the tubes, are too well known to need special comment. Rectal alimentation is the last resort when feeding by the mouth becomes impracticable from exhaustion or other causes. Defibrinated blood has been found of special value in this connection.

The treatment of sleeplessness in melancholia is a point on which considerable divergence of opinion exists, and one which demands special attention. Narcotics, hypnotics or sedatives are vaunted as important curative agents by some observers, but are utterly condemned by others. The history of these remedies is against them. Every year, almost every month, some new drug is brought out, with loud asseverations of its harmlessness, only to fall into desuetude on the appearance of a newer and more fashionable rival. The nervous and mental disorders resulting from the protracted use of these drugs, where we have known them sufficiently long, are generally recognized, these disorders too being almost invariably accompanied by grave defect of bodily nutrition. The most enthusiastic admirers of this class of drugs will not claim that their beneficial action results in improvement of the general health. The experiments of Binz, of Bonn, seem to indicate that the action of many narcotics is directly on the brain-cells, not on the vessels, and this action is certainly not in the direction of improving nutrition, but corresponds rather to a pathological change.

The question may fairly be asked: In what way do these drugs affect the cerebral nutrition so as not only to avoid producing ill-effects from continued use, but even to relieve abnormal conditions often of long standing? The inquiry may also be made whether the state of insensibility produced by them is identical with normal sleep. In the latter, nutritive repair and active resorption take place. Do the same changes occur during insensibility from drugs? The experiments of Hodge make it possible to hope that this question will soon be answered on the physical side, and the investigations of Kraepelin in regard to their effect on mental reactions will probably give a solution from the mental aspect. In the meantime we must be content to rest on observation and experience. The phenomena involved are complex and little understood. Many eminent men have expressed

confidence in these drugs, but the balance of opinion seems to have steadily shifted, and those who still believe limit their approval to some one drug or to some special limited form of disorder. Not inutility merely, but harmfulness and deleterious effects, are being more and more ascribed to them.

Personal observation has led Rayner to the conviction that narcotics and sedatives are often pernicious in melancholia; that they almost invariably protract and intensify the disorder, and their systematic use is to be avoided by every means in our power. Only under conditions in the environment of the patient which preclude other means of treatment are they even temporarily admissible. They are dangerous, not only by exaggerating the condition, but by leading the physician to neglect the more legitimate means of combating sleeplessness and disorder. They are dangerous also to the public, who too readily obtain them under cover of the physician's prescription in their belief in the harmlessness of the latest novelty.

Rayner bases his opinion on results obtained by himself—in the great improvement following omission of the use of these drugs, even where other conditions remained unchanged; on the expressions of those who have been subjected to their influence; and on the symptoms of mental confusion and stupor sometimes introduced into otherwise simple cases.

Sleeplessness due to peripheral irritation—as, for instance, in the presence of undigested food in the stomach—must be met by removal or avoidance of these conditions.

The sleeplessness of melancholia is probably due in most cases to the arterial supply not being sufficiently inhibited to reduce it to the level which obtains in normal sleep. Occasionally, however, it appears to be due to excessive inhibition or anemia. In the majority of cases, therefore, the object must be to divert blood from the cerebral area to other areas of the body, especially, of course, to the abdominal, or, where this is for any reason undesirable, to the limb areas. Primarily we should remember that the condition of defective vaso-motor inhibition is probably due to the cry of the ill-nourished cerebral cells for nutriment. The first sleep in insomnia usually follows on the taking of food; in slight degrees this occurs directly on the ingestion of nutriment, by the mere diversion of blood, but in more severe cases sleep follows later, when it is probably due in part to the added supply of nutriment. The return of sleep at the accustomed hour should be promoted by making this correspond to the completion of the digestion of the last meal, which should not give any cause of peripheral irritation, but be as nutritious and digestible as possible. The brain should also have rest by the avoidance of intellectual effort or emotional excitement during the latter hours of the day.

The diversion of the blood to the abdominal area may be effected by hot fluid food, hot fluids, or a small amount of stomachic stimulation. The general diversion may be accomplished by stimulation of the cutaneous surface by warm baths, the warm pack, abdominal compresses, etc. Stimulating applications of mustard in various ways may also be used. Cold to the feet, followed by brisk rubbings, is at times efficacious.

TREATMENT OF ECZEMA.

In the *Boston Medical and Surgical Journal* for Oct. 10, 1895, BOWEN first discusses the modern theories about eczema, and then passes in review the chief methods of treatment that have been introduced or advocated during later years. At the outset it may be said that most of these methods depend for their efficacy upon the consistence of the preparations recommended, their power of adhesion to the skin, or their mode of application. No specific has been discovered, and few new drugs have been added to our store of internal remedies.

Arsenic is never used as a routine treatment, and never in the acute stages. It is reserved for the chronic, unyielding varieties, and even here its use has been much curtailed. A variety of drugs are used internally, according to the general indications of the individual case, but no new remedies of much value have been introduced. Ergot, phosphorus and antimony have their advocates, but their specific influence on the disease is far from proved.

In the treatment of the acute forms our attention should be directed to the use of remedies to protect the inflamed surface from the outer air, to absorb the secretions and to limit their formation, and to lessen the itching—which in many cases is intolerable.

One of the most useful principles that has been introduced during the last fifteen years is that of substituting, especially in the more or less acute forms, variously compounded pastes for the ointments that had previously

been relied on. Hebra's method was to spread the ointment or liniment upon lint or cotton and have it worn continually. The good results of this procedure were due in the main to the absolute sealing up of the inflamed surface from the outer air, and to the removal of the products of the inflammation. But as fats are an important constituent of all liniments and ointments, it is found that irritation is frequently caused by the splitting up of these fats into fat acids and glycerin, under the influence of the secretions with which they are brought in contact. This irritative property appears to vary to a considerable extent in different cases, owing both to individual susceptibility and to the grade of the inflammation. It is to be ascribed both to the action of the fat acids and to the glycerin, probably, as both of these substances are often of an irritating nature.

These drawbacks are obviated by the use of preparations composed of indifferent or astringent powders mixed with vaselin in such proportions that a smooth, thick paste is formed, admirably suited for the absorption of the products of inflammation and for protection from the outer air. Chief among these is the well known Lassar's paste, composed of equal parts of oxide of zinc and starch in double the quantity of vaselin. Its claimed advantages have been substantiated by experience. Some of these are: that it does not liquefy at the ordinary temperature of the skin, but dries on quickly and can be retained even in very hot weather by sprinkling on a little powder; it can be applied to very small patches, and adapts itself to all parts of the body; hairy portions of the body are the only ones to which it is not suited, as the hairs become matted together from the solid constituents. It is found in practice that patients who are unable to endure the application of any ointment without violent reaction, bear this preparation with ease, and even where vaselin alone is not borne the mixture with zinc and starch may suit well.

At the time this paste was first spoken of, Lassar believed that salicylic acid was almost a specific for eczema, and he therefore combined it with his paste in the following formula:

℞ Acid. salicylic., gr. xxx;
Vaselini, ʒ xij;
Zinci oxidi,
Amyli, of each ℥ vj.

This paste should be spread over the inflamed and oozing region in a thick layer, and may afterward be covered with a thin layer of absorbent cotton. The dressing is changed once or twice daily if the secretion is considerable; if not, it may be left in position for several days oftentimes. By means of this paste alone many cases may be completely healed without having recourse to more stimulating remedies in the later stages. The salicylic acid is of no practical use in acute forms, and, although a small percentage is rarely irritating, it is best left out. The chief action of salicylic acid cutaneously is of a keratolytic character—that is, it has the property more than any drug known of softening and dissolving the horny layer, without at the same time causing a dermatitis. In the later stages of eczema, where there is infiltration in the corium and hypertrophy of the horny layer, the addition of the salicylic acid to the paste is indicated, even in much greater proportions than in the above formula.

Salicylic ointments in the treatment of infantile eczema have been much praised. Taking this paste as a base, various medicaments, such as sulphur, ichthyol, boracic acid, etc., may be incorporated with it, and in some instances a more favorable effect obtained than when the drug is mixed with animal fats or simply with vaselin.

Many attempts have been made to produce preparations that when dried upon the skin will form firm but flexible thin coatings, exerting a certain amount of pressure, protecting equally from the irritation of the outer air and from the entrance of microorganisms, to which various medicaments of known value in eczema may be added. Pick introduced gelatin dressings, which he at first used in combination with chrysarobin in the treatment of psoriasis, and to these Unna and Beiersdorf proposed to add a percentage of glycerin. Later, Pick brought forward a sublimate-gelatin dressing which he recommended both for the earlier erythematous and papular stages, and for the thickened, scaling varieties. Thirty grammes of gelatin are mixed with sufficient water, macerated for several hours, then liquefied on the water bath and evaporated to 75 grammes; to this are added 25 grammes of glycerin and 0.05 gramme corrosive sublimate. This gelatin dressing is liquefied by heat when used, and a thin coating is painted over the affected part. In chronic eczemas of the lower leg especially, this preparation has often proved of value.

Acting upon the principles of the gelatin dressing, and in the endeavor to obtain a preparation that would offer all its advan-

tages without its disadvantages (notably among the latter the necessity of heating the preparation each time before applying it), Pick introduced tragacanth, and Elliot proposed bassorin as a base for incorporating medicaments—preparations which, like gelatin, are useful in certain forms of eczema as well as in a variety of cutaneous affections. Unna, working upon the same lines, introduced ichthyol varnish, a mixture of ichthyol in various proportions with starch, solutions of albumen, etc. An almost endless variety of substances may be obtained in this way which form protective coatings upon the skin. Their use is limited, however, as it has not been shown that they are superior to other methods, and in many instances their inferiority is distinctly apparent. In certain cases, however, they are a useful addition to our resources.

Much greater practical value must be accorded to the salicylic soap-plaster recommended by Pick for the vesicular and moist as well as the thickened forms of eczema. Its advantages in the writer's experience are far greater in the latter class of cases. Its composition is as follows:

℞ Emplastr. saponat. liquefact., ℥ iiss;
Oleo olivar., ʒ v;
Acid. salicyl., gr. xxij.

The plaster is spread and cut into strips, which are firmly adapted to the affected parts and left in position for several days. Its great advantage is that it is not necessary to change it frequently.

A real value must be admitted for ichthyol and resorcin, which belong, according to Unna, to the group of reducing agents, and owe their therapeutic action to this property. Ichthyol as used is really a sulphoichthyolate of ammonium which is obtained from a bituminous substance found in the Tyrol. Its efficacy is probably due in part to the large percentage of sulphur it contains, and in part to its consistence, as it readily forms a sort of protecting and adhesive varnish when applied to the skin. Unna considers it of special efficacy in the so-called nervous eczemas and in intertriginous affections. It may be used in solution with water in various proportions, in a thick varnish, mixed with albumen or starch, or in ointment form. On moist patches an emulsion with water of the strength of 1 to 10, or 1 to 20, is often of service, especially when followed by a soothing ointment or paste. It may also be incorporated with the various pastes, varnishes and gelatin preparations that have been described. The objections to its use are its color and disagreeable odor. Thiol has the advantage of being odorless, and has seemed in many cases an efficient substitute for ichthyol.

Resorcin, which is of much value in many cutaneous affections, has but a small place in the treatment of eczema. In certain scaling forms it may be used with advantage, but its irritating properties, especially in certain individuals, limit its range of usefulness in this affection.

Much prominence has also been given by Unna to his treatment by ointment- and plaster-muslins, a system that has no doubt its advantages, but which should not be looked upon as superseding other equally good and in certain cases superior methods. The ointment-muslins are made by impregnating muslin on one or both sides with the ointment wished for. The muslins thus prepared are cut into strips, applied to the skin, and bound down by muslin bandages. It is often of advantage to spread the ointment or paste that we wish to use on muslin, and ready-made applications of the sort are often convenient, but it is difficult to see how the method so minutely elaborated contains any new principle or offers any especial therapeutic advance.

The plaster-muslins are made by spreading the drug to be used upon a thin layer of gutta-percha backed with muslin. The advantage claimed for this kind of plaster is that a larger percentage of the medicament is brought into contact with the skin, the amount of adhesive substance needed being so much smaller. In eczemas these plasters have been recommended for the treatment of the chronic infiltrated patches, and are often of much service when combined with white precipitate, salicylic acid, etc. Their usefulness is far greater in tuberculosis and in chronic processes with hypertrophy of the horny layer than in eczema.

Lassar's method of treating eczema, even in the acute stage, by means of baths, may be mentioned, active remedies such as tar, chrysarobin, etc., being borne while in the bath without irritation. This method was supplemented by the use of ointments, pastes, etc., in the intervals when the patients were not in the bath.

In conclusion, it may be repeated that the writer's intention was merely to touch upon some of the methods of treatment suggested of late years. The older, and in many cases more reliable, methods have not been mentioned. It is to be remembered that there is

as yet no specific for eczema—that regulation of the diet, attention to hygiene, and removal of any conditions unfavorable to the general health, are of very great importance. Internal remedies are often of great aid, especially in the so-called nervous forms; and success depends in this class of cases more upon the general management of the patient's life, and upon moral influence and support, than upon topical applications.

FERRATIN, AN IRON TONIC AND FOOD.

In Sajous's *Annual of the Universal Medical Sciences*, 1895, vol. v, A, 90–91, Dr. Dujardin-Beaumetz summarized the record of ferratin, the new iron food and tonic reconstructive, as follows: Ferratin is the name given by Schmiedeberg, of Strasburg, to that combination of iron which is found in the normal tissues and which is stored up in the latter as a reserve from which it may be drawn for the formation of blood. He has succeeded in producing this substance, by artificial means, in the form of a fine powder of red-brown color, like oxide of iron. Two forms are known to commerce—the one simple and insoluble in water, the other a sodium compound which readily dissolves on stirring after being allowed to stand a little while in water. The latter must be as free as possible from lime, otherwise an insoluble calcium compound is formed. Ferratin, in contradistinction to those compounds of iron hitherto in use, is readily assimilated and does not produce any unpleasant disturbances in either the gastric or enteric functions, even when used for a lengthy period; indeed, in some cases its exhibition seems to produce improvement in the appetite and regularity in defecation. As a portion of the substance is decomposed by the acid gastric juice and also by sulphuretted hydrogen, a sufficient quantity of ferratin must be ingested to leave an overplus in the bowel-tract so that the organism may pick up as much as it requires. There is no necessity whatever to anticipate overloading of the organism with the iron, as absorption and excretion appear to be mutually controlling. Excretion does not take place through the kidneys. The daily dose for adults is 1 to 1.5 grammes (15½ to 23¼ grains). Acids should be avoided, but no other restrictions are necessary. Schmiedeberg points out that ferratin is first and foremost a food and its use is indicated in all cases in which nutrition and blood-formation are unsatisfactory.

Banholzer, of Eichhorst's clinic, relates his clinical investigations with this preparation. In anemia following acute disease the hemoglobin was quickly increased (over five per cent. in eight days), as also the number of red cells. In chlorosis the same results were visible, even in a more marked degree. The general condition was improved and the increase in weight in most cases considerable. The good effects on the appetite were obvious. When compared with Blaud's pills, which also give good results, ferratin was found to lead to a greater increase in the hemoglobin. John Harold found that in three cases of severe anemia the preparation appeared to exert a remarkable hematinic effect; it did not interfere with digestion or produce any constitutional disturbance. In one of the patients, iron, in the form of a scale-preparation or as reduced iron, had been previously given for twelve months without apparent benefit.

Germain Sée has also tested ferratin, and finds that it can be employed in men apparently healthy or in children and chlorotic subjects, the curative action not being interfered with by injurious secondary effects, as is often the case when ordinary ferruginous preparations are used. The dose used by him is from 0.05 to 1.5 grammes (⅞ to 23¼ grains) two or three times a day. Each dose contains about seven per cent. of iron. Marfori states that care should be taken not to associate it too closely with acid materials. Hugo Wiener reports twenty cases in which it produced favorable results.

TREATMENT OF ADENOID GROWTHS IN THE NASO-PHARYNX.

Dr. Semon discusses this subject at length in the *British Medical Journal*. A combination of the symptoms of post-nasal growths—the defective nose-breathing, the open mouth, the compressed nostrils, the snoring and even embarrassed breathing during sleep, the sluggish intellectual powers, and notably the defective hearing from middle-ear disease—occurring in early life, generally denotes the existence of these growths in the naso-pharynx.

These vegetations tend to atrophy and disappear spontaneously when adult age is reached; hence the question might be asked: Why not wait for their spontaneous disappearance? No doubt, in slight cases, presenting few symptoms, and especially if unattended by ear mischief, no harm would

follow the policy of waiting for their spontaneous disappearance. In most instances, however, such delay might be fraught with most important consequences. Dr. Semon gives the following pregnant reasons against delay in removing these growths: (1) the influence of the obstruction upon general health, mental development, and the formation of the face—results which remain forever, even if the glands themselves undergo atrophy; (2) the ever-present danger of ear complications; and (3) the greater liability to, and seriousness of, infectious diseases of childhood, especially diphtheria and scarlet fever, so long as the hypertrophic glands are present.

The operative is the only form of treatment worthy of consideration. Of the many methods of operating for the removal of these growths, that with Gottstein's curette or some of its modifications is the simplest and most efficient. It is right, however, that we should be acquainted with the various other methods which are employed, and the author describes these, as well as the operation with Gottstein's curette, in the following order: (1) the natural finger-nail; (2) the artificial nail; (3) Hartmann's curette; (4) Gottstein's curette or its modifications; (5) Golding-Bird's curette; (6) Lowenberg's forceps and modifications; and (7) Meyer's ring-knife. Sometimes a combination of methods is adopted—the forceps for removing the large tough portions, and the curette and finger-nail for the softer variety and for those growing on the lateral walls of the pharynx. We shall first, however, consider—

The question of anesthetics. There is no doubt that a general anesthetic adds a slight element of risk to this operation, which, without an anesthetic, may be said to be absolutely free from danger. On the other hand, it is found that in the cases of children or very nervous adults it is very difficult without an anesthetic to eradicate the whole of the growths, at any rate at one sitting. A general anesthetic is more frequently given in England than on the Continent, where it is quite customary to repeat the operation, it may be several times.

One of the chief risks in operating under an anesthetic is that of blood finding its way into the larynx or bronchial tubes, causing asphyxia, or failure of the heart's action, or subsequent inflammation of the lungs. This danger may be said to be almost entirely averted by the adoption of a suitable position for the patient, by the prompt use of sponges, and, above all, by a proper method of giving the anesthetic. In regard to the position of the patient during anesthesia, most surgeons operate with the patient's head hanging backwards over the end of the operating-table, so that the blood or fragments of detached growth may pass out through the anterior nares or mouth. Unfortunately, this dependent position of the head tends for the time being to increase the bleeding, which, however, as a rule, soon ceases after the head has been raised. Some operators, such as Mr. Hovell, prefer that the head should be on a level with the body, and trust to the rapid mopping up of the blood with sponges. Dr. Butlin operates with the patient on his side, the thighs being flexed and the head bent a little forward on a low pillow. Mr. Braine, in giving nitrous oxide gas and ether, chiefly for the operation with the finger-nail, first places the patient in the semi-recumbent position, and, when the narcosis is sufficiently complete, flexes the trunk forcibly on the thighs—the blood escaping from the mouth and nose into a basin placed between the patient's knees. In the curette operation under an anesthetic, he always operates with the dependent position of the patient's head, and even then rapid removal of the blood by sponges is necessary to prevent suction of blood into the trachea. With nitrous oxide gas the sitting posture may be justifiable.

In regard to the kind of anesthetic employed, the fact of several deaths having occurred from the use of chloroform has led some to discard it and to resort to ether or nitrous oxide gas, or to both. It is alleged in favor of ether that the power of coughing and swallowing is generally retained, and that the noisy respiration of ether anesthesia, compared with the quiet breathing of chloroform, keeps you better informed as to the state of the respiration; besides, the heart's action under ether does not fail so quickly. On the other hand, the large quantity of frothy secretion which is usually poured into the throat, and the more profuse bleeding due to great venous turgidity, are highly objectionable features of ether narcosis; while the labored and stertorous breathing, instead of being an advantage, may rather tend to suck the blood and frothy secretion into the larynx. Nitrous oxide gas may suffice with the nail operation or even with a rapid curette operation, but it does not allow of sufficient time for the use of forceps. In order to save time, the gag should be introduced before the beginning of the administration of

the gas. Some operators begin with nitrous oxide gas, then go on to ether, and when the patient is fairly deeply anesthetized they continue with chloroform till the end of the operation. The writer has operated with both ether and nitrous oxide gas as anesthetics, and his experience has led him to prefer chloroform, cautiously and sparingly given on a mask, with a plentiful supply of air, care being taken that, while the corneal reflex is abolished, the cough and swallowing reflex be not entirely in abeyance. It is important, however, that, though very deep chloroform narcosis is to be avoided, it should be deep enough to relax the muscles of the face and to prevent retching during the operation.

When the growths are numerous and large, prolonging the operation, the anesthesia may be cautiously maintained by pumping in more of the vapor through a tube from Junker's apparatus held at the side of the gag. It is right to mention, however, that such an important authority on anesthetics as Dr. Silk disapproves of giving chloroform or any other anesthetic after anesthesia has been induced and the operation begun. Upon the importance of this Dr. Silk places great stress. Here it may be remarked that a competent anesthetist with special experience in these cases is of very great importance. He should wait beside the patient till perfectly satisfied that he is safely out of the anesthetic. The deaths which have occurred seem to have been in some cases due to neglect of this precaution. While the surgeon and anesthetist turned aside for a few minutes to attend to some other matter, thinking the operation was safely completed and the anesthesia passing off satisfactorily, the fatal result took place from sudden failure of the heart's action.

Only in the softer and flatter forms, occurring in very young children, does the writer think the method of scraping them away with the finger-nail sufficient by itself to eradicate the growths. The finger-nail may, however, be employed with advantage for the clearing away of remnants of growth after the use of a curette or forceps. If the finger-nail treatment be employed, the nail of the right index-finger should be first kept properly pared, so as to be neither too short nor too long. If too long, the nail is apt to bend or even to break when tearing off the vegetations. The finger-nail should, of course, be scrupulously clean, and before operating it is a good plan, as proposed by Mr. Pritchard, to immerse it for a short time in rectified spirits, both for the antiseptic effect and for the hardening influence on the nail. If no general anesthetic is given, a ten-per-cent. solution of cocaine should be applied to the naso-pharynx, either with a spray through the nasal passages or by a plug of cotton on forceps introduced from the lower pharynx. The cocaine is more efficient in adults, as we are able in them to apply it more freely and with greater safety to the walls of the naso-pharynx. The child being seated in a chair, his arms and legs held firmly by assistants, the right index-finger is introduced into the mouth, moved rapidly backwards, and turned up behind the soft palate. The nail of the finger is then made to tear or cut through the soft tissue in the roof and back wall and from the neighborhood of the Eustachian prominences, if any there exist. In order to prevent the patient biting the finger of the operator, the first phalanx and the metacarpo-phalangeal joint should be protected by thick india-rubber tubing, or—as is done by some operators—by pressing the cheek of the patient between his teeth on the left side. In some cases the soft palate moves backwards before the finger, so as to close the way to the naso-pharynx and prevent the introduction of the finger; in such cases the author has found it a good plan to introduce a uvula-retractor and press the uvula and soft palate firmly but gently forward with the left hand. When the finger is well into the naso-pharynx the retractor is withdrawn.

Some authorities—such as Mr. Pritchard, Mr. Field, and Mr. Lennox Browne—seem to trust entirely to this method, which was first advocated by Dr. Guye, of Amsterdam. There is a decided feeling, however, on the part of most specialists, that the method is in general insufficient, subsequent operations being not infrequently required.

An artificial nail of steel is used by some authorities, such as Dalby, Capart, and Bezold. It is fixed to the index-finger, and, being of course stronger than the natural nail, is more capable of penetrating and removing the growths. The writer has found its use unsatisfactory, owing to the impaired tactile sensibility and the increased bulk of the finger preventing safe and efficient use. Justi and Trautmann employ an artificial nail fixed on the end of a stem which is attached to the finger. Of this method the writer has had no experience.

Gottstein's curette is a triangular fenestrated instrument attached at a right-angle

to a long handle. The inner edge of the base of the triangle is sharp as a knife. This is the instrument which the author generally employs in removing these growths, and he has found this method more convenient and satisfactory than any other. In this his experience agrees with that of Politzer, Rosenberg, Semon, McBride, and others. In this country, when Gottstein's curette is employed, the patient is usually anesthetized with chloroform, and lies on his back with the head hanging well over the end of a table, supported by the hands of an assistant, the back of the neck resting on a firm pillow. A waterproof cap, similar to a bathing-cap, should cover the head in order to prevent the blood which flows from the nose mingling with the hair. A large towel or piece of jaconet should envelop the upper part of the body. A gag (Mason's) should be applied on the left side, well guarded with thick india-rubber tubing so as not to injure the teeth or gums. The teeth should be examined, and if a loose tooth is found care must be taken for fear the gag should separate it altogether and endanger the patient by the tooth slipping into the larynx during the operation. The chloroformist is at the head of the patient, the operator on the right side, and an assistant for attending to the gag and sponges at the left. A dozen small honeycomb sponges, clean and aseptic, secured on sponge-holders, should be at hand. The finger is introduced into the naso-pharynx to determine the quantity, situation, and character of the growths. The triangular end of the curette is then introduced behind and above the soft palate, with its convexity upwards and backwards, avoiding the lateral walls, until the blunt edge of its base is in contact with the posterior edge of the nasal septum. The handle is now grasped firmly, and the curette pressed well down upon the roof of the pharynx and drawn backwards and then downwards, so that the sharp edge is made to sever all the vegetations in its sweep. With the ordinary curette the vegetations removed in this way are either expelled through the nose, mingled with the blood, mopped out with the sponges, or swallowed. A useful modification has recently been introduced in which there is an arrangement with two sharp prongs in front of the triangular steel frame for detaining the vegetations cut off with the sharp edge of the curette. Usually three strokes are made before withdrawing the curette, and then, with one sponge quickly introduced after another into the pharynx, the blood is mopped up by the assistant. Once more the cavity is examined with the finger, and if any growths are still found the curette is again introduced, or the finger-nail may be sufficient. If the curette is employed without an anesthetic, the patient should be seated on a chair having a low, broad-cushioned back, over which the head is bent, and supported by an assistant. After cocaine has been freely applied to the walls of the naso-pharynx, the tongue is pressed down with a spatula, and the curette is employed in the same manner as when an anesthetic is used.

Hartmann's curette is preferred by some operators, such as Krause of Berlin, and Brunner of Bradford. The force is applied laterally, and not antero-posteriorly as with Gottstein's curette. An anesthetic is rarely used by those who employ this instrument. The patient, if a child, sits upon the knee of a trained assistant, who, with his legs and left hand, fixes respectively the patient's legs and arms, at the same time holding the patient's head firmly, the palm of the right hand being placed firmly against the patient's forehead. In this way the head of the patient is held immovably against the chest of the assistant. Light is reflected into the throat, the tongue is depressed by a spatula, and the curette is then pushed up into the naso-pharynx, where it is firmly pressed on the posterior wall and roof and moved, as on a pivot, to one of the lateral walls, whence its edge is made to sweep across to the opposite side with firm pressure so as to sever and remove the vegetations in its course. The writer's limited experience of this method of operating has not impressed him favorably. It is not so efficient as Gottstein's instrument, as it usually leaves untouched the growths in the front part of the naso-pharynx, while it is apt to injure the Eustachian prominence and excite middle-ear disease. Dr. Seright, who frequently witnessed its use in Krause's hands, believes it to be a very efficient instrument.

Golding-Bird's curette is an oval fenestrated instrument connected with a long stem, bent at rather more than a right-angle near the fenestra; the cutting or scraping edge, instead of being on the inner aspect of the base, is found on the lower edge. It is applied in a similar way to Gottstein's curette, but on account of the position of the scraping edge it penetrates more deeply and is particularly suitable for scooping out the growths situated at the junction of the roof and back

wall of the naso-pharynx. While the writer has not had much experience of this instrument, he thinks it a serviceable one.

Many operators prefer the use of forceps devised by Lowenberg and modified at different times by various workers. Up to a year or two ago Dr. Semon's own method was to operate with forceps, and he found them particularly suitable with the patient in the sitting posture. There is no doubt that when patients or their friends shrink from the use of a general anesthetic, this mode of operating is probably more convenient and less painful than other methods. With the patient seated on a chair, and the head, arms and legs firmly held, light is reflected in the ordinary way into the pharynx. With the blades closed, the forceps are introduced as far as the posterior wall of the pharynx. The blades are then pushed up to the roof of the naso-pharynx, when they are widely separated and made to lay hold of one or more of the adenoid projections, which are brought away partly by cutting and partly by traction. The forceps may in this way be introduced three or four times at one sitting. The blades of the forceps should have their cutting edges above and behind, while there should be a free space in front, so as to lessen the chance of catching hold of the septum of the nose. Owing to the anxiety of the operator to avoid the septum, the growths immediately behind it are apt to escape the forceps. Mr. Hovell (who discards all curettes or scraping instruments) has modified the forceps so that the two cutting edges are circular and do not meet edge to edge, but are so arranged that the one blade encloses the other, their action being thus that of a punch. He claims for this modification that it avoids the risk of pulling away shreds of mucous membrane or of injuring the septum. Whatever forceps may be used, it is important that they should not be too large. Many of those sold by instrument-makers are much too large for children, in whom most of the cases of post-nasal growth occur. Just as after the curette operation, the finger-nail may be used with advantage to remove any fragments which may remain after the forceps have been employed. If the operation is performed under anesthesia, the patient should lie on his back, with his head on a level with the body. A gag is used as in the curette operation, and the index-finger of the left hand is introduced into the naso-pharynx with the back of the hand downwards and forwards so as to guide the blades of the forceps to the individual growths. In this way the forceps are introduced several times and the growths individually pulled or cut away until, as informed by the finger, they are all removed. This sounds very satisfactory, but in practice it is often found to be no easy matter to accommodate the index-finger and the blades of the forceps in the small naso-pharynx of a child so as to manipulate freely, and the efforts to do so often lead to much bruising and injury of the parts. When operating with the forceps, while the head hangs over the end of the table, especially great care should be taken to avoid laying hold of the septum. The author holds that in this dependent position the use of forceps is unjustifiable unless one is able with the left index-finger to guide accurately the blades of the instrument.

We must not omit to mention the method of operating adopted by the late Professor Meyer, of Copenhagen, to whom the profession is under a deep debt of gratitude for being the first to draw attention to the existence of these growths in the naso-pharynx. He operated through the nasal passages and used a ring-knife having one sharp edge, attached to a steel stem, which is introduced through the wider nasal passage. When the knife has reached the naso-pharynx it is turned horizontally if the growth is in the roof. The left index-finger of the operator is introduced through the mouth into the upper pharynx, and the ring-knife is pressed up so as to encircle one of the growths and then drawn forward, severing the growth. Few operators have followed this method of Meyer.

It is well, after an anesthetic operation, that the patient be turned on his side, retaining the head on a level with the body, or somewhat raised, while the gag is kept between the teeth for a minute. Some operators, in order to prevent bleeding, maintain pressure on the walls of the naso-pharynx for a few minutes with a sponge or folded gauze or curved forceps. In most cases, however, blood is swallowed in considerable quantity, frequently exciting vomiting, the vomited matter consisting of blood mixed with the contents of the stomach. It is well always to warn the friends that vomiting is likely to take place, if it has not already done so, and that some one should be at hand beside the patient ready to help. Pieces of ice placed in the mouth, or even in the nostrils, after the patient has regained consciousness, tend to check the sickness. The ice may be given at intervals for twenty-four hours, during which

the patient should abstain from hot liquids or solids. Bleeding of an alarming nature is very rare, but the author has been twice sent for, a few hours after the forceps operation without an anesthetic, owing to pretty copious bleeding; pressure upon the roof of the naso-pharynx by means of a fold of cotton moistened with a styptic solution, introduced with forceps, easily controlled it. The patient should rest in bed for two days and keep the house for a week after the operation, during which no local treatment of the nose with douche or syringe should be employed. These precautions are especially important in damp, cold weather, so as to avoid middle-ear inflammation, which, however, has seldom followed this operation in the author's practice. There is no doubt that injudicious nasal treatment after the operation is apt to excite inflammatory mischief in the middle ear.

Not infrequently these growths are found associated with hypertrophied tonsils, which are often regarded erroneously as the sole cause of the nasal obstruction and the deafness. Probably the safest plan is to first remove the enlarged tonsils—without, if possible, an anesthetic,—and then, after the healing process is complete, the post-nasal growths should be operated upon. Some specialists remove the tonsils and the post-nasal growths at the same time under an anesthetic, and in certain cases this is perhaps the best method. To produce so extensive a bleeding surface, however, might in some persons be attended with considerable risk, partly from the bleeding and partly from the greater risk of septic infection.

If mouth-breathing continues in spite of the operation, and we are confident that the post-nasal growths have been thoroughly eradicated, we should carefully examine the nasal passages in order to make sure that no obstruction exists there. If, in either side, the inferior spongy body is found to be enlarged or hypertrophied, cauterization with the galvanic cautery or chromic acid may be required. In mild forms of obstruction a prolonged but careful use of an alkalo-saline solution with a spray apparatus or a suitable syringe may prove sufficient. If the obstruction be due to spurs upon the septum or deflections, these may require operation, but such forms of obstruction are not common in childhood. If, after the mechanical impediment to free nasal breathing has been removed, the mouth-breathing still continues, means must be adopted to help the person to overcome this habit. The simple plan should first be tried of causing the patient to sit still for fifteen minutes twice or thrice daily, during which he studiously keeps the mouth closed and breathes through the nose alone. If after a time this proves insufficient, an appliance should be provided consisting of a small india-rubber cup, on which the chin rests, the cup being kept in position by means of bands secured round the head. This should be worn for a time at night so as to keep the lower jaw from falling. Or we may use an india-rubber band with a mouth-piece of soft leather secured round the head during sleep, so that the leather mouth-piece covers the mouth and compels nasal breathing. Another plan is to retain the lips in contact by means of long strips of sticking-plaster. Some writers ridicule the use of these aids to nose-breathing, alleging that if the nose and naso-pharynx are really free from obstruction the breathing will naturally become nasal without any such contrivances, and that if there is defective nasal breathing we shall find a mechanical cause in the nasal cavities, which must be removed by suitable treatment. The author is, however, disposed to differ from such writers; he has undoubtedly seen cases remedied by these artificial helps, where the mouth-breathing had persisted after ample breathing-space had been secured in the nose and naso-pharynx.

TREATMENT OF PUERPERAL MASTITIS.

In an article on this subject in the *Brooklyn Medical Journal* for December, 1895, JEWETT states that whatever difference of opinion there may be with reference to the methods of infection, prevention clearly depends on such measures as are directly or indirectly antiseptic. In other words, the indications for prophylaxis are, to promote the resisting powers of the lying-in patient, both local and general, and to maintain as far as possible a surgical cleanliness of the danger points.

Prevention begins in the management of pregnancy. The pressure of tight clothing in the later months of gestation, especially in primiparæ, is obviously inconsistent with the proper development of the nipple, and it directly increases the tendency to occurrence of fissures during lactation.

The cleanliness of the nipple, which is so necessary after nursing begins, should be maintained for at least a month before labor. A borax wash (tablespoonful to the pint) is a suitable detergent. A plain soap-and-water

bath meets the requirements. Daily cleansing keeps the parts free from excessive accumulation of sebaceous material and exuded colostrum.

The domestic popularity of brandy as a nipple lotion during the later weeks of pregnancy is perhaps in part explained by the anesthetic effect of dilute alcohol upon the skin. Surgeons who use alcohol in the process of hand-cleaning can testify to its action in hardening the cuticle and blunting its sensibility. There is reason to doubt, however, that bathing the nipples with alcoholic and other astringent lotions is a suitable preparation for nursing. It is more probable that hardening the skin predisposes it to cracking. It would seem more rational to keep the nipples as supple as possible. The application of fresh cacao-butter, or some equally bland emollient, after the daily cleansing, promotes this end.

Gently drawing out the nipples with the fingers once a day during the last weeks of pregnancy helps to develop them and to inure them to the prospective manipulations of the child's mouth. This practice on the part of the expectant mother is especially advisable if the nipples be small or retracted.—It is the duty of the obstetrician to warn his patient early of the necessity for all the foregoing precautions.

When nursing begins, the delicate cuticle of the mammilla is broken and abraded, and during the post-partum month the septic exposure is especially increased by the contact of hands liable to be infected from the lochial discharges. The occurrence of thrush or of ophthalmia in the child obviously adds to the risk of mammary infection. Hence the need of a cleanly management of the nipples during the first weeks of lactation. The avoidance of septic contact is clearly important. Bathing with a boric-acid lotion after each nursing is useful. A saturated aqueous solution is not too strong. Cleansing the infant's mouth with a similar wash, once or twice daily, is in the interest of both mother and child. Care must be taken not to abrade the buccal mucous membrane, lest the practice invite the trouble which it aims to prevent. For the breasts, more active antiseptics are more effectual, but they require greater care in their use. The author has employed with satisfaction a dressing wet with a mercuric-iodide solution (1:5000 or 1:1000). The mercurial must be rinsed off with boiled water or with the boric-acid solution before nursing. In Tarnier's hospital service there were four abscesses in 1235 puerperæ with whom the boric-acid lotion was employed, and only three in 1727 when this antiseptic was replaced by the bichloride.

In the writer's practice, mammary abscess has become, in recent years, an exceedingly rare occurrence—a fact fairly attributable to the improved aseptic care which the lying-in woman now receives at the hands of the professional nurse.

Milk engorgement is combated by training the child early to nurse. The infant should receive its first lesson as soon as the condition of the mother will permit, usually within six or eight hours after birth, and no effort should be spared in teaching the child to suckle before the milk secretion is fully established. The use of the breast-pump, as a rule, is unsatisfactory; it frequently fails and is liable to bruise the breast.

At the hands of a skillful nurse, massage is often useful for the relief of over-distention, either of the entire breast or of single lobules. It is contra-indicated in the presence of inflammation, and is permissible only when not painful. The breasts should be well oiled in order that the nurse's efforts be not expended in mere friction. The stroking should be practiced in the direction of the lactiferous ducts, from the base of the gland toward the apex. In hypersecretion the compression binder is an extremely valuable measure. It is applied firmly, the pressure being evenly distributed over the breast by a moderately thick layer of cotton wool under the binder. An opening in the centre of the cotton compress prevents injurious pressure upon the nipple. Harris uses compression both as a preventive and a curative measure in mastitis. Horne recommends an elastic bandage in engorgement. Topical applications of oleate of atropia are effectual for diminishing the milk secretion, but they must be used with care lest the secretion be too much repressed. Saline catharsis and the restriction of liquids are indicated in over-free secretion.

A part of the prophylaxis which must not be overlooked is addressed to the general health of the patient. Tonics are indicated in the majority of convalescents from childbirth.

Essential for the prevention of mastitis, is the preventive and curative treatment of nipple lesion. In addition to what has already been said with reference to the prophylactic care of this organ during the early weeks of lactation, it must not be forgotten that prolonged maceration of the nipple in the child's

mouth is injurious. A single nursing need not occupy more than ten or at the most twenty minutes, and regularity should be insisted upon.

The cacao-butter or some other similar inunction may be employed with advantage after each nursing, the surfaces having first been cleansed as already explained.

Excoriations and fissures heal in most cases under proper and timely antiseptic treatment. An ointment, of equal parts of subnitrate of bismuth and castor oil may be used as advised by Hirst. The writer prefers to this a similar ointment made with the glycerite of starch. But the glycerin preparation may not always be well borne by the skin. The ointment should be frequently sterilized by heat. Before applying, the parts should be disinfected, a valuable agent for this purpose being hydrogen dioxide. While a host of nipple lotions and other applications have been recommended in these affections, none is more rational or promises better results in ordinary cases than some simple but carefully executed antiseptic plan of treatment.

Pain during nursing may be relieved to some extent by penciling the nipples five or ten minutes before the child is put to the breast, with a one- to five-per-cent. cocaine solution, heated to the sterilizing-point shortly before using. A one- to two-per-cent. carbolic lotion applied in the same manner is sometimes useful as an anesthetic. The addition of one-tenth its volume of glycerin prolongs the action and keeps the skin soft.

Deep and painful fissures may be treated with a solid stick of nitrate of silver. The entire raw surface should be touched. The lips of the fissure being well separated, the caustic point is drawn slowly through it. Care must be taken that no excess of moisture is present, otherwise the dissolved silver salt may trickle over the surrounding surface and healthy structures be injured. A serious objection to this treatment is the exquisite pain it causes. This may be in a great measure prevented by first benumbing the part with a four-per-cent. cocaine solution. After the application of the caustic the nipple may be covered with a piece of lint, well wet with the anesthetic lotion. The affected nipple should be rested, if possible, for twenty-four hours or more. Instead of the solid stick, repeated applications of an aqueous solution of the nitrate of silver may be preferred; in the strength of one or two per cent. it causes little pain and frequently does good service.

In excoriations and fissures that are not too sensitive and do not bleed readily, the nipple-shield may be tried; it protects the nipple from the friction, and to some extent from the maceration, of sucking. Unfortunately for this method, the child as well as the mother has to be consulted, and the substitute is not always accepted. If artificial nipples are used, it is important that they be rendered aseptic by boiling for five minutes in water immediately before using, and not handled with unclean fingers. Similar protection to the nipple lesions is afforded, though in a less degree, by coating the affected surfaces with a pellicle of compound tincture of benzoin. When other measures fail, suspension of nursing for one or two days sometimes succeeds. If both breasts are affected, each may be rested on alternate days. The breast which is not in use should be firmly supported with a compression binder, the nipple being relieved of pressure by the plentiful use of cotton wool beneath the binder.

It is extremely rare that the nipple lesions are so rebellious to well directed treatment as to necessitate the total abandonment of nursing.

THE SYSTEMATIC EMPLOYMENT OF HOT WATER IN SURGERY.

The *Medical Press and Circular* of Nov. 27, 1895, states that PAUL RECLUS recently gave an interesting clinical lecture at the Hôpital de la Pitié, on the systematic employment of hot water in his wards. For the last ten years, he said, he had recommended the application of hot water as a surgical dressing, and he was glad to say now that he had many followers. Hot water has been proved by Koch to increase the power of antiseptics, and for this reason he (M. Reclus) preceded his operations by washing thoroughly the parts with this simple agent. It was not necessary for him to allude to the action of hot water on ulcers, superficial inflammations, lymphangitis, phlebitis, boils, and anthrax, for every one knew what relief was obtained from it; he would confine his remarks to the application of hot water in sprains, crushed limbs, hemorrhoids, prostatitis, and inflammations of the internal female genital organs.

Of the ordinary treatment of sprains—namely, massage, elastic bandage, and prolonged douche of cold water—he had made a kind of synthesis, assimilating one procedure to the other, to the great benefit of the patient; thanks to this simple treatment, the cure was effected in from four to fifteen

days. Immediately after the accident the elastic bandage is rolled around the part as tightly as possible without discomfort, but the patient must in no wise suffer from the pressure. Morning and evening the bandage is removed and the joint plunged into a bath of 118° F., and the temperature gradually raised to 122°, 126°, and even to 134°. Under the influence of the heat, pain ceases immediately, circulation and nutritive exchanges become more active, and these modifications probably accelerate the absorption of the peri-articular exudation. In any case, at the end of ten minutes the joint becomes more supple and movement is rendered easier. Massage constitutes the third term of the treatment.

In extensive traumatic lesions of the limbs he pleads for systematic conservatism. Never, no matter how great the injury, does he amputate the crushed limb; he envelops it in antiseptic substances, and leaves to nature herself the care of separating the dead parts. This practice has the manifest advantage of preserving to the patient, if not the whole of the limb, at least a much larger portion than would be left by amputation.

But this conservatism *à outrance* he would not dare attempt without the help of hot water. His method is as follows: The patient, generally suffering from shock, pale, bloodless and frigid, is placed upon the operating-table and wrapped up in warm flannels, the wounded limb alone being uncovered. The teguments around the lesion are washed with soap and water, shaved, rubbed with ether to remove all traces of grease, and finally bathed in a solution of permanganate of potash. A large irrigator is then filled with hot water (143° F.), and every corner of the wound is washed by the current, the force of which is increased by raising the reservoir above the patient. Frequently a small amount of some antiseptic is added to the liquid. The hot water has the triple advantage of being an effectual antiseptic in itself; of acting as a powerful hemostatic, obliterating the small veins and arteries; and finally, it warms the patient, algid from loss of blood and traumatic shock. The dreaded hyperemia disappears gradually, and frequently before the patient has quitted the operating-table the temperature reaches normal, instead of falling as when amputation has been performed. The subsequent treatment of the wound differs but little from that usually followed.

The use of hot water in inflammatory affections has sometimes given surprising results. In ordinary sore throat and tonsillitis, gargles of water at 131° F. every hour give almost instant relief. For several years M. Reclus has observed the best effects from applications of hot water to hemorrhoids, and it is especially useful in acute prostatitis. The method is simple: the cannula of an irrigator filled with water is introduced gently into the rectum, and the cock turned half on, so as to allow the liquid to penetrate slowly, bathing the parts. The operation is repeated twice daily until cure is complete.

The day is not long past when very competent surgeons proposed and practiced extirpation of the adnexa for pain due to pressure in the vaginal cul-de-sac, certain menstrual troubles, and a dragging sensation in the lumbar region; to-day much graver symptoms are necessary before one has recourse to laparotomy, and Reclus has never operated in these affections of the lower outlet without having first tried medical treatment, of which hot water was the chief factor. He commences by disinfecting the vagina and the uterus, and dilating the os, which he drains freely for a long time; if necessary, the cavity of the womb is curetted and the walls dealt with by the application of tincture of iodine, creosote, or chloride of zinc. This treatment is that of all his colleagues, but where he differs from them is in the manner of applying the hot water. They have recourse to vaginal irrigation, and do not exceed a temperature of 113° F., whereas he employs enemata at 131° F. He does not, however, proscribe vaginal injections, which are certainly useful for cleaning the parts, although they can afford no relief to the congested uterus. The recommendation of vaginal douches is due to an anatomical error, for the uterus and its adnexa can be effectively reached only by way of the rectum; the enema accumulates the warm liquid in the rectal fossa, protruding into which can be felt the internal genital organs.

The enema is taken in the morning, half an hour before rising, at a temperature of 131° F. at least, and allowed to flow in slowly. It should be retained about thirty minutes. Thanks to this treatment, followed in all the details, he has seen a very large number of cases of salpingitis recover.

BLEPHARITIS.

GRADLE, of Chicago, writes on this topic in *Medicine* for October, 1895. He asserts

that in the treatment of blepharitis the existence of the predisposing conditions must be recognized if we wish thorough success in all cases. Where there is obstruction of the tear-passages, no local treatment of the lids will cure the inflammation. When the skin of the lids is of insufficient length, you may at the best get a temporary improvement of the blepharitis, but in spite of all local measures you will have relapses unless you insure complete nocturnal closure of the lids. In those instances, however, where a moderate degree of ametropia is the presumable basis on which the blepharitis has been developed, you can at least attempt to treat the lids without resorting to glasses, if that be the patient's preference, although now and then you may be compelled to return to glasses after a few weeks.

The nature of the application varies with the form of the disease. In squamous blepharitis you will be able to obtain the quickest results by means of a vaselin ointment containing sulphur and resorcin in the strength of about two per cent. This ointment, which the author selected on account of its known efficacy in seborrhea of the scalp—a disease evidently similar to squamous blepharitis,—has proved almost a specific in his experience, and similar results have been recorded by Dr. de Schweinitz. In those instances in which there are no underlying conditions that prevent healing of the blepharitis, the daily application to the edge of the lid will effect a cure in from one to three weeks. It is well, however, to continue the ointment at longer intervals for a good many weeks subsequently, in order to guard against relapses. The mercurial preparations, the white precipitate or the yellow oxide, recommended by most text-books, he has found neither as quick nor as reliable in their action in squamous blepharitis as the sulphur salve. The latter will at times irritate, rarely on account of the sensitiveness of the skin, but usually because it gets into the eye. It is the resorcin which causes the conjunctival irritation if it gets in, and if the patient has this experience the resorcin can be omitted—probably with less rapid benefit. When the scales adhere so firmly as to be detached with difficulty, gentle friction with a chloral-hydrate solution (1 in 10) will facilitate the cleansing.

In the ulcerative form of blepharitis, the first condition for success is to remove the crusts. If the patient does not do it well, the physician must do it. The exposed ulcers can then be cauterized with nitrate of silver in the form of a stick or strong solutions. If this be done every day or two, the ulceration can be stopped usually within a week. But with the ulcerative form there is often also interstitial inflammation, and if this receives no attention relapses will occur. Again, we must search to see whether there are any predisposing conditions which keep up the inflammation, and if there are none we will be able to remove the inflammation in the course of three or four weeks by means of the above-mentioned mercurial salves, provided the blepharitis has not been of very long duration. There are instances which represent a mixture of the squamous and ulcerative types, and in these the sulphur salve proves of great benefit; but where there is no distinct desquamation he has not seen any especial results from the use of sulphur. In some instances he has found a vaselin ointment containing from five to eight per cent. of pyrogallic acid of more rapid influence even than the yellow oxide of mercury. It is not irritating, but sometimes stains the skin temporarily.

In other very persistent instances of interstitial blepharitis he has obtained moderate success by frequent cauterization of the edge of the lid with solid nitrate of silver, even though no ulceration existed. It must be confessed, however, that when the interstitial type of inflammation has existed beyond the middle period of life and is not dependent on remediable predisposing conditions, it is sometimes practically incurable.

THE TREATMENT OF PNEUMONIA BY THE INHALATION OF LARGE DOSES OF NITRITE OF AMYL.

His experimental researches upon the action of nitrite of amyl upon the blood led HAYEM (*Les Nouveaux Remèdes*, Nov. 8, 1895) to essay its employment in the treatment of pneumonia.

His experiments and clinical observations show that much larger doses of this drug may be employed without danger than the classic dose given in text-books, and that the drug is not as dangerous as has been taught. He has in one séance had a patient respire 60, 80, and even 100 drops of nitrite of amyl upon a compress. The results which he obtained in cases of tuberculosis were interesting, but not of as great value as those in connection with pneumonia, where he believes the use of the drug in large doses is to be recommended and seriously considered.

A compress should be used, having within it an impermeable tissue. Fifteen drops are poured upon it, and it is held about an inch from the nose and mouth of the patient, who is told to respire naturally and deeply. When the first amount has evaporated, another 15 drops are poured on, and finally a third 15. Thus in a séance of about three to five minutes, 45 drops are employed. The ordinary symptoms show themselves—redness of the face, acceleration and throbbing of the pulse in the arteries, pressure in the temples, hurried respiration, then great rapidity and smallness of the pulse; sometimes a slight cough, dyspnea, and deep inspiration; later the red color of the face becomes purple, the extremities become cyanotic, as also the lips, with finally a slight torpor.

These phenomena disappear rapidly. When the compress is used, the dose for men should be at least ten drops. In ordinary cases one inhalation a day suffices. In grave cases the author employs two inhalations, one in the morning and one at night. He has never observed an accident that could be attributed to this method of treatment.

The treatment should be continued during the continuance of the disease and for two or three days after defervescence sets in. There is a variation in the susceptibility of patients, and the dose should be modified according to the result produced.

The employment of the nitrite of amyl does not preclude the use of alcoholic stimulants. The effects produced are not upon the duration of the disease nor upon the temperature, but are exclusively local upon the lungs themselves. This effect is shown in a diminution, more or less marked and more or less rapid, of the dyspnea, and in the modification of the sputa, which tend to become less viscid and less difficult to discharge.

The action of the drug is probably upon the vaso-motor system, producing a local hyperemia which aids in the improvement of the circulation in the pneumonic areas and the consequent absorption of the exudate.

The results which the author obtained in patients of low vitality and a very unfavorable hygienic status were very favorable. He had sixteen deaths in seventy-seven cases of non-tuberculous pneumonia.

QUININE HEMOGLOBINURIA.

TOMASELLI (*Clinica Moderna*, May 1, 1895) describes an affection found in the subjects of chronic malaria, the administration of quinine being followed by symptoms resembling paroxysmal hemoglobinuria. Half an hour to two hours after the quinine is given, the patient is suddenly seized with nausea, more or less marked tremor, and high temperature. He complains of a feeling of weight in the loins, and an imperious need to void urine. When the urine is passed, it is found to be sanguineous. Often there is vomiting, diarrhea, and finally jaundice. Hematuria alone, without the other symptoms, may be present. The method of administration and the quantity of the drug used seem to have no influence in relation to this curious idiosyncrasy, which appears to be more or less transmissible, since several members of the same family showed the same intolerance of the drug. The most important predisposing conditions seem to be malaria and the special idiosyncrasy.

Quinine has also been known to cause urticaria, delirium, mania, and vesical spasm when given in malaria; the addition of opium may prevent the latter symptom. In the cases in which quinine causes hematuria, etc., it must be proscribed entirely; even mere rubbing of the skin with the drug has been known to cause hematuria in susceptible subjects. As a substitute the author uses salicin and Fowler's solution, or alcoholic extract of eucalyptus.—*British Medical Journal.*

[See "Collective Investigation on the Influence of Quinine in Malarial Hematuria," in THERAPEUTIC GAZETTE for June, 1892.—ED.]

TINCTURE OF CANTHARIDES AND ALBUMINURIA.

In an article on this subject, published in the *Gazette Hebdomadaire de Médecine et de Chirurgie* for Oct. 26, M. DU CAZAL remarks that at a recent meeting of the Académie de Médecine M. Lancereaux stated, in a communication on albuminuria from a therapeutic point of view, that when uremia has ceased we must seek to modify the altered tissues, and that the medication necessarily varies according to whether it is the connective and vascular tissues, or the epithelial tissues, that are involved—in the first case potassium iodide was to be preferred, in the second case cantharides had given him the best results. Two cases of epithelial nephritis with albuminuria and considerable anasarca had been cured in less than three months under the influence of cantharides; while in the case of a patient who had considerable anasarca, and

passed only 15½ ounces of urine in twenty-four hours, the renal secretion became abundant within two days after the ingestion of 12 drops of tincture cantharides, and in eight days the anasarca had disappeared.

The question under discussion, says the author, is certainly one of great importance. Acute catarrhal nephritis often results in death from the uremic and congestive symptoms it causes, in the presence of which the physician is too often powerless.

Since M. Lancereaux's communication Du Cazal has had occasion to apply the treatment in a number of cases of nephritis, and in four cases out of five has obtained complete recovery in a surprisingly brief period, the fifth case showing considerable amelioration only. Three of these cases were acute nephritis, one consecutive to pneumonia that had been treated by cold water; the others were of scarlatinous origin.

It was his first trial of the treatment, and the rapidity and persistency of the recovery were a great surprise to him. In the third case, one of acute catarrhal nephritis of influenzal origin, the drug caused rapid diminution and then complete disappearance of albumin, although the pathological condition had a manifest tendency to become chronic. Notwithstanding the failure to obtain recovery in the fifth case, says M. Du Cazal, the results ascertained in the others absolutely confirm the account of those communicated by M. Lancereaux to the Académie.

M. Laboullene and M. Olivier have recalled the fact that the treatment by tincture of cantharides was recommended by Grisolle and by Raver, but had been forgotten until M. Lancereaux drew the attention of the profession to it, thereby, in the author's opinion, rendering a great service to physicians and, above all, to patients.—*New York Medical Journal*, Nov. 23, 1895.

THE THERAPEUTIC VALUE OF CALOMEL FOLLOWED BY SALT AND ACID SUBSTANCES.

DR. OTTOLENGHI, in his researches on the possible conversion of subchloride into perchloride of mercury in the alimentary tube, followed up the administration of calomel with an equal dose of chloride of sodium, with dilute chloride of sodium (0.75 per cent.), and with mineral lemonade (hydrochloric acid one part, water 150 parts), respectively.

The first results were obtained on nine dogs (the experiments are now being continued with equal success). The animals were given from 0.03 to 0.17 Gm. calomel for every kilo of body-weight. Three of them received in addition an equal quantity of common salt; three, simple mineral lemonade; two, a 0.75-per-cent. solution of chloride of sodium; while only one underwent a mixed treatment of salt and mineral lemonade.

Of these, three dogs died on the third, seventh, and fifteenth day, respectively. In all the nine cases diarrhea was observed; in four, liquid stools mixed with blood. At the necropsy the gastro-intestinal mucosa in all cases showed marked signs of irritation, such as characterize the injection of perchloride of mercury (except when vomiting followed the ingestion of the remedy). In one case an ulcer was observed in the first portion of the intestine that had fixed itself against the psoas muscle; and in another, death followed peritonitis, there being several diphtheritic ulcers all along the intestinal tube. The dogs, although strong and young, continually lost weight, their appetite gradually decreased, and they were generally depressed.

The most characteristic results were obtained with chloride of sodium; in small doses that substance always poisoned the animals.—*British Medical Journal*, Sept. 14, 1895.

FERRATIN.

MARFORI (*Archives Italiennes de Biologie*, tome xxiii, fasc. i–ii, p. 62) gives the results of some new researches on the absorption of ferratin and its biological action. He says that the different conditions in which the mucous membrane of the intestine happens to be, largely affect the quantity of ferratin that can be absorbed. In order that absorption may take place, before all things it is necessary that the preparation should not be decomposed in the gastro-intestinal canal, but the sulphuretted hydrogen which is sometimes present in the intestine in large quantities may attack the ferratin slowly and bring about its decomposition. Researches on the absorption of this substance may, therefore, give very different quantitative results according to the greater or lesser intensity of the putrefactive processes going on in the intestine. The large amount of absorption (13.7 to 41.68 per cent.) that occurs after administration of saline purgatives, Marfori ascribes in part to the aseptic con-

dition of the intestine, and in part to the fact that saline purgatives cause a desquamation of the upper layers of the intestinal epithelium, and therefore expose a thinner layer of young cells through which absorption more readily takes place.

When the gastro-intestinal canal is in its normal condition the absorption of ferratin is much less, according to Schmiedeberg, but since the latter's experiments render it impossible to distinguish between the iron of the ferratin and the iron introduced in the food, Marfori proceeded as follows: he administered to the animal a saline purgative, and fed it solely upon milk; the lower part of the intestine was also cleared by saline enemata. About a week later ferratin was given in repeated doses. The amount absorbed varied between eleven and thirty per cent. of the amount administered. With reference to the question whether ill-effects might not arise from long-continued administration of the drug, Marfori found that it was possible to poison animals by injecting large doses into the blood; nevertheless a man would need to take about 2¼ lbs. of ferratin in the course of a month to produce a similar result, assuming as a basis for calculation experiments on dogs. Since he would actually, however, only receive about one-twentieth of that amount, there is no danger in continued administration of the drug—a statement confirmed by clinical experience.—*British Medical Journal.*

PILOCARPINE IN LARGE DOSES IN THE TREATMENT OF THE PNEUMONIA OF INFLUENZA.

POULET (*Les Nouveaux Remèdes*, Nov. 24, 1895) calls attention to the remarkable results which he has obtained by the use of this drug in treating the pneumonia which accompanies the epidemics of *la grippe* and is so potent a factor in increasing the rate of mortality from this disease.

He calls attention to the fact that in a number of instances, though in reality only a few, the general condition of the patient does not correspond to the gravity of the pulmonary lesions which are determined by auscultation and percussion. They are the walking cases, and an examination of external symptoms will not detect the gravity of their condition.

The author, having had two fatal cases, concluded that the drugs he had been employing were not sufficiently active, and that the cases demanded more vigorous treatment; he therefore determined to use the hydrochlorate of pilocarpine in a dose of five-sixths of a grain per day in adults. His results were all that he could ask. Delirium, if it had been present, ceased; the temperature fell; and a calm with sleep came on. To produce this result it was necessary to get the physiological effect of the drug, usually shown by profuse salivation, sometimes by sweatings, and very exceptionally by vomiting. The amount of the drug required to produce this result was about 1⅔ grains, distributed over two days; rarely it was necessary to prolong the treatment over a third day and to give another five-sixths of a grain of pilocarpine. The after-treatment was by the use of less powerful anodynes.

The author obtained very favorable results, but four patients dying of one hundred and eight cases of pneumonia, and two of these did not receive this treatment. One of the other two was *in extremis* when first seen, and the other fatal result followed an imprudent exposure by the patient.

This agent should be reserved for the treatment of pneumonias in the aged, and in all cases arising as the result of an infection.

[We cannot agree with these recommendations, for the depressing effect of pilocarpine upon the heart and general system would seem to contra-indicate its use in the conditions here named.—ED.]

APPENDICITIS.

The *Practitioner* for July, 1895, gives the following interesting *résumé* of the recent literature upon the appendix vermiformis, first calling attention to the paper of CAVAN and BARNHART (*Canadian Practitioner*, March, 1895): The authors of this communication have made a number of investigations referring to the anatomy and pathology of the appendix, some of which are interesting and instructive. It has already been demonstrated that great variations in the length and position of the process occur, and a careful summary of such variations is here given. A mesentery is always present, running nearly or quite to the tip, and in it can sometimes be demonstrated a lymphatic gland into which the lymph from the appendix passes. The pouches which have been described as occurring on either side of the appendix were found to be usually absent, but in the female a peritoneal ligament running to the ovary was shown to be tolerably constant. The process was always distinctly intra-peritoneal,

and the so-called valve of Gerlach was usually imperfect, and probably has no valve-like function. A large amount of lymphadenoid tissue is always present in the walls, and a perfect lumen was almost invariably found. Treves's statement as to the frequent absence of the appendix is not confirmed, and, in fact, appears to be a great exaggeration. A certain amount of mucus was usually found within it, mixed with a certain quantity of semi-fluid fecal material, while fecal concretions were not uncommon, thus bearing out Fitz's statement that of three hundred and twenty-one cases of perforative inflammation, concretions were found in fifty per cent., and in twelve per cent. foreign bodies existed. The bacillus *coli communis* was almost constantly present, and infection with this organism may be looked on as one of the most important causative elements in appendicitis; Hodenpyl found it in the pus of thirty four out of thirty-five cases.

In the same number of the above journal is found an account of a case under the care of DRS. MCPHEDRAN and CAVAN, in which a pin was found post-mortem lodged in the appendix of a patient who had died of pyemia. No signs of recent inflammation were present, but there had evidently been a good deal of old mischief lighted up by the intruder, since the walls were thickened and constricted. Several similar cases of the discovery of foreign bodies in the appendix have been recently recorded:

Thus, ROSWELL PARK (*Medical Record*, March 16, 1895) reports two cases in which appendicitis was lighted up by pins within the lumen of the process, and which were cured by operation.

MCBURNEY (*Medical Record*, March 30, 1895) also found two grape-seeds in a healthy appendix of a patient on whom he was operating for an abdominal tumor; although no symptoms had been caused, he took the opportunity of removing it.

On the other hand, DR. J. CHRIS. LANGE ("Remarks on the Pathology and Medical Treatment of Appendicitis," *St. Louis Clinique*, March, 1895) considers that the foreign-body theory, as the origin of this affection, cannot now be maintained, since it has been shown that fecal concretions are so commonly observed in healthy individuals. He maintains that one of the chief factors in its etiology is that the appendix is a rudimentary organ, or rather remnant of an organ, and that it has but a scant blood-supply, only one artery passing to it—and that without any collateral anastomosis, except in the female, in whom a small vessel runs along the appendiculo-ovarian ligament; and in this way he seeks to explain the fact that the disease is four times more common in males than in females. Torsion of the process, bringing about arterial or capillary thrombosis and a resulting diminution of the vitality of the walls, together with infection by the bacillus *coli communis*, is looked on as the direct cause of appendicitis. Lange admits that wherever pus exists, surgical treatment is required, and then discusses *in extenso* how best to prevent its formation, —viz., by absolute rest of the bowel and antisepsis of the tube. Arrest of peristalsis is obtained by the use of morphine, while powdered charcoal, subnitrate of bismuth, guaiacol and calomel are relied on to render the bowel aseptic. Purgatives can only do harm.

The origin and nature of the concretions or calculi found in the appendix form the subject of a communication by ROCHAZ to the *Revue Médicale de la Suisse Romande*, 1894, No. 12 (*American Journal of the Medical Sciences*, June, 1895). He states that they are always formed in the appendix itself and are usually single. Their general shape is elongated, their color brownish, and their consistence as often hard as soft. They are frequently laminated, and the nucleus is generally lighter in color than the envelope. Chemically they are very similar in nature to human feces. They are more frequently present in men than in women, and are not induced by constipation. Changes in the normal shape and position of the appendix induced by strictures and adhesions seem to be responsible for their formation in the majority of cases.

At the Munich Medical Congress the subject of appendicitis was discussed, and records of the meetings are to be found in the *Münchener Medicinische Wochenschrift* (April 16, 1895) and in the *Wiener Klinische Rundschau* (April 28, 1895). The subject was opened by SAHLI, who, after noting the change in nomenclature which has recently taken place, and with reason, proceeded to discuss the nature of the tumor so often felt in these cases, pointing out that it rarely consisted of feces, but rather of thickened intestinal walls, exudation, and infiltrated fascia transversalis and abdominal wall; while if pus existed, it also would add bulk to the mass. The existence of a sero-fibrinous exudate is, in his estimation, entirely theoretical and absolutely opposed to the results of the many exploratory punctures which he had

made. He considers that pus is always formed in these cases, and the occurrence of spontaneous cure to be due either to the absorption of the pus or to its evacuation into the bowel or elsewhere. As to the relative frequency of cures, he quotes on the one hand Renvers's two thousand cases treated in the German Army, in which only twenty-six per cent. recovered without operation; while of 7213 cases treated by four hundred and sixty-six Swiss doctors, only 476 were operated on. Of those not dealt with by operation, only 8.8 per cent. died, and relapses occurred in twenty per cent. The treatment recommended consists in small doses of opium, a diet restricted to fluids, and the application of an ice-bag. Operation is advised in those instances where, in spite of such measures, the symptoms persist at the end of the third day unchanged or aggravated, although occasionally it may be permissible to maintain expectant treatment till the eighth day. Evacuation of the pus, and, if possible, removal of the appendix, should be undertaken. The same treatment is also recommended for relapses or recurrences.

HELFERICH followed, and, after alluding to the anatomical position of the appendix and its character as a diverticulum, stated his belief that appendicitis usually commenced as a result of retention of the secretion, in consequence of kinking of the tube and contraction of its orifice. He agreed with Sahli as to the usually purulent character of the exudate, and, while admitting that such could be entirely absorbed, thought the surgeon ought not to reckon upon it; he could not agree with him, however, as to the advisability of waiting six or eight days, since it was clearly proved by Fitz's statistics that fifty-six per cent. of the fatal cases occurred within the first week. Diffuse peritonitis occurs in two forms: one the diffused septic variety, with symptoms of septic intoxication soon supervening and rendering the case quite hopeless, and the other a progressive fibrino-purulent form, the prognosis of which was somewhat better. In all such cases do not hesitate to operate immediately, unless the patient is so profoundly collapsed as to render operation unjustifiable. Relapses frequently demand interference, especially if the patient is not quite well between the attacks.

SONNENBURG objected to Sahli's statement that all cases of appendicitis resulted in suppuration, and drew a great distinction between the simple form in which a sero-fibrinous exudate was met with and the suppurative variety. The simple form results from kinking of the mesentery of the appendix, owing to the great mobility of the little process, and to retention of and changes in its contents. Localized collections of pus may thus form within it, as also fecal concretions, while adhesive peritonitis is usually lighted up. Various clinical manifestations may be induced, including not only the typical mild attack, but also seizures of what has been termed *appendicular colic*. In the usual variety the symptoms commence with a slight pain and fever, but are very different from the stormy onset with rigors and high fever of those cases in which ulceration or perforation is present. Operation is rarely called for under these circumstances, except when the condition persists unchanged for some considerable time. On the other hand, as soon as there are evident signs of suppuration, as indicated by the severity of the symptoms, it is always wise to interfere and remove the appendix.

DR. SCHELL (*New York Medical Journal*, April 20, 1895) has had the opportunity of examining the appendix in one or two cases of the early stages of the disease, and records here the phenomena he has observed. The destructive changes began in the tubular glands which are so abundant in this region, and through the ulcers thus induced the infective material evidently gained access to the lymphadenoid tissue placed beneath, and in this suppuration occurred and extended laterally under the mucous membrane beyond the original superficial lesion. It is thus easy to understand how stenosis and contraction of the lumen of the tube are produced in cases which recover. The fact that the appendix is also frequently involved in typhoid fever is commented on, and a certain percentage of the cases of perforation in this disease are always due to the lesion being located in this region. The value of purgatives is also discussed, and the author considers that in the simpler cases it is often wise to unload the bowels by the cautious use of an enema, so as to remove irritating ingesta, fermenting intestinal secretions, and fecal masses. In the more severe cases, however, nothing but harm can follow, since active peristalsis is lighted up, and this tends to break down and tear adhesions, to open perforative ulcers which have been closed by inflammatory lymph, and to spread infection by the movement of the intestines.

At a meeting of the New York Surgical Society (*Annals of Surgery*, May, 1895, p.

597), DR. STIMSON raised the question whether it was not better practice in certain cases to break down adhesions and institute a definite search for the appendix after an abscess had been opened, presuming that too great risk was not thereby incurred. The generally accepted idea is that after one attack of suppurative appendicitis sufficient changes are set up in the neighborhood to render the patient exempt from the risks of further attacks. Two cases had occurred to him recently, however, that indicated that this was not necessarily the case, since one patient, after what had been undoubtedly two attacks of suppurative inflammation, presented himself for the cure of a resulting hernia, and on operation it was found that the appendix was free within the peritoneal cavity and practically devoid of adhesions.

DRS. J. D. BRYANT and FOWLER fully corroborated Stimson's statement that frequently after an attack of suppurative appendicitis the appendix is fully as capable of originating another attack as formerly.

DR. RUSHMORE considered that, although such cases did occur, it would be better practice to defer removal of the appendix till a second attack, should it appear unduly dangerous and difficult at the first operation, as by that time it might be anticipated that the adhesions would be firmer and more resistant, and hence less risk of infecting the peritoneal cavity would be present.

ON THE SURGICAL TREATMENT OF PERITYPHLITIS.

HAENEL, of Dresden (*Münchener Medicinische Wochenschrift*, March 26, 1895), has treated twenty-one cases of perityphlitis in the past six years, of which eleven recovered without operation, while seven were dealt with surgically in the acute stage, and in three the appendix was removed on account of relapses. In dealing with the question of pathology, he discusses the idea as to the cæcal origin of the affection, and states that the post-mortem records obtained at Munich fully bear out the generally received idea that the appendix is primarily involved, since in ninety-one per cent. of the fatal cases the mischief had certainly started within it. This may have been due in some measure to chronic constipation, although the influence of foreign bodies or fecal concretions is very doubtful; more probably retention of secretion in the appendix as a result of swelling of the mucous membrane or defective action of Gerlach's valve, combined with increased activity of the contained micro-organisms, accounts for most of the cases. If perforation occurs, suppuration is sure to follow, and the pus may either be widely diffused through the peritoneal cavity, or may be encysted within it, or may burrow in different directions in the retro-peritoneal tissue. Thus it may point directly backward in the lumbar region, or may run downward under Poupart's ligament into the thigh, or may, again, find its way upward behind the ascending colon to constitute a subphrenic abscess. In rarer cases the pus has pointed in the left side, or gravitated into the pelvis and opened into the rectum. As to treatment, the author considers that active interference is necessary (1) for suppuration, (2) for perforation peritonitis, and (3) for relapses. The existence or not of pus in any particular case is often a matter of considerable doubt, since there is no pathognomonic sign of its existence; the totality of the symptoms must be considered and the exploring needle not relied on, since negative results are worthless and positive evidence may be dangerous. When once it has been established that pus is present, the sooner operation is undertaken the better, as the only danger of the proceeding lies in its being delayed too long. The incision recommended is one parallel to Poupart's ligament, and we are advised always to make an effort to reach and remove the appendix, if such can be accomplished without much difficulty; if it is left, a fecal fistula may persist, but even if this does not close spontaneously an operation can easily be undertaken for it later on. If the abscess is retro-peritoneal, it must be dealt with in a similarly energetic manner and early incisions made into it. Thus the author is able to report one case of secondary subphrenic abscess cured after opening it above the liver, and also in the cæcal region. As to diffuse peritonitis, it is stated to be the cause of seventy per cent. of the deaths from this disease. A distinction is drawn, as pointed out by Mikulicz, between the diffuse septic form of the affection and the progressive fibrinopurulent form, the prognosis being much worse in the former than in the latter. The author, however, seems somewhat to doubt the efficacy of laparotomy in such cases, stating that good results as well as bad may be obtained by opium. As to the third indication for operation—viz., the occurrence of relapses—the frequency of this sequel is first discussed, and statistics quoted which

go to prove that it is met with in a good deal less than half the cases. It is difficult, however, to be certain of these figures, since it is impossible to follow all the cases for a sufficient length of time, some of the relapses not occurring for years. The advisability of operating on these patients is discussed at some length, and it is pointed out that, although the actual mortality is comparatively small, there is some risk of lighting up dangerous inflammation by such interference by breaking down protective adhesions. If undertaken at all, it should always be performed during the interval following an acute attack.

A NEW METHOD OF HYSTERECTOMY.

RICHELOT (*Universal Medical Journal*, July, 1895) has devised an original and improved method of performing this operation. He claims for his procedure great advantages over the current ones, which are long and laborious, and over the quicker ones sometimes employed, which are frequently attended with danger. The principal advantage of his method lies in the complete absence of ligatures and sutures, forcipressure only being used. A scalpel, a dissecting-forceps, a long and a short hemostatic forceps, and finally two long Richelot forceps, provided with a long "bite," comprise the necessary armamentarium. The patient is placed on her back, and the operator takes his place between the separated limbs. The vagina is first thoroughly disinfected; for, in the course of the operation, the surgeon's hand passes alternately into that canal and the abdomen. The usual abdominal incision being made, the uterus is enucleated and laid on the abdomen, covering the lower angle of the operation wound. When fibromata occupy the lower segment of the organ, the usual fragmentation is at once practiced; when, however, they are interstitial, they are left untouched and the operation is proceeded with as follows: An interior peritoneal flap is fashioned by means of an incision across the anterior surface of the uterus, extending from one broad ligament to the other. The broad ligaments are thus liberated and thrown downward over the bladder. The left index finger is introduced into the vagina, and the anterior cul-de-sac is incised with a large pair of scissors, the discission of the vagina being pushed nearly as far as the sides of the os. Then, leaving the uterus *in situ*, the broad ligament on one side is seized by the hand quite close to the uterus, an opening in the posterior cul-de-sac is made with the point of the scissors, and through this orifice is passed, *per vaginam*, the posterior limb of Richelot's forceps, the anterior limb being thrust through the corresponding hole in the anterior cul-de-sac. The forceps is then thrust from the vagina from below upward, and, guided by the hand holding the broad ligament, is placed on that ligament. The same manœuvre is practiced on the other side by means of the second pair of Richelot's forceps, both ligaments being seized by the forceps and liberated from their extreme attachments. The uterus now hangs only to the posterior cul-de-sac, which is in its turn divided with a few snips of the scissors, and, as this section gives rise to hemorrhage, three hemostatic forceps are placed in position. A plug of iodoform gauze is inserted into the upper part of the vagina, none being placed in the abdomen. The abdominal incision is sutured and the operation is over. Five hysterectomies were thus performed by M. Richelot, four being for fibromata and one for cancer; the four first mentioned were successful. The duration of the operation varies from thirty to thirty-five minutes, and no complications need be feared during the healing process.

URETHRAL DIVERTICULA.

BAGOT (*Medical News*, August 31, 1895) states that urethral diverticula or pseudo-urethroceles, though sometimes classed together with true urethroceles or dilatations of the middle third of the urethra, constitute a distinct affection, differing from the latter both in etiology and physical signs. The urethral diverticulum consists of a cavity or pouch situated in the urethro-vaginal septum, usually about the middle third, and communicating by a narrow opening with the urethra, which is not dilated, but is of normal calibre.

With regard to diagnosis, on examination a firm, tender swelling is found situated in the urethro-vaginal septum, usually about its middle third; but when the cyst is of large size its upper limits may reach the cervix or even further, and, as in Tait's case, pass up into the lateral fornices. On applying pressure to the tumor a quantity of thin ammoniacal pus is discharged from the urethra. In Santesson's case, however, compression of the tumor caused its contents to be evacuated backward into the bladder. By examination with the electric urethroscope, the opening in the floor of the urethra can be detected. Should any

difficulty be experienced in doing so, the pus will be seen welling up from the aperture on applying pressure to the tumor while the urethroscope is being slowly withdrawn. That the tumor is not a simple dilatation of the middle third of the urethra, is shown by the fact that a large-sized sound, introduced into the urethra, does not enter the sac during its passage into the bladder; but by carefully searching along the posterior wall of the urethra with a probe the opening can usually be discovered and the probe passed into the cyst. Unlike a true urethrocele, the pseudo-urethrocele can be palpated as a definitely outlined cyst after its contents have been expressed.

Treatment consists in dissecting out the cyst and closing the cut surfaces with silk or catgut sutures. Passage of the catheter after the operation is unnecessary unless retention of urine supervenes. After dissecting out the diverticulum, should the parts not appear sufficiently healthy to allow of immediate reunion, which will be of rare occurrence, a soft catheter is introduced into the urethra and allowed to remain for from two to four days. The wound in the septum is dusted over with iodoform and covered with iodoform gauze. The cut surfaces are then allowed to granulate up, or secondary suture may be performed.

MOVABLE KIDNEY.

FRANKS (*British Medical Journal*, Oct. 12, 1895) holds that undue mobility of the kidney occurs far more frequently than is generally admitted. He thus indicates his conception of a movable kidney:

The patient lies in the dorsal position. Standing on the right side the surgeon passes the four fingers of the left hand underneath the hollow of the loin below the twelfth rib. The thumb in front encircles the abdomen just below the costal arch, but without exercising any pressure. The patient is directed to draw a full breath. Immediately before expiration begins, the surgeon presses with his thumb as deeply as possible, following the liver as it recedes during expiration whilst the fingers behind press the loin forwards. If now with the right hand the kidney can be felt lying entirely below the grasp of the left hand, the right kidney is pathologically movable. If the right hand presses on the tumor so felt, whilst the left hand relaxes its grasp gradually, the tumor can be felt to slip between the fingers of the left hand and to disappear upwards toward the position normally occupied by the kidney; this sensation is pathognomonic of a movable kidney. A kidney which can be felt to descend so that its lower half may be felt, but which moves back on expiration, is physiologically movable.

Normally the kidney is kept in place by a fatty capsule and connective tissue. After death we may find this pretty firm and affording apparently some considerable amount of support to the kidney; during life the fat partakes more of a fluid than a solid character, and would unquestionably allow of a certain amount of motion, yet that it does exert some restraining influence is shown by the greater frequency of movable kidney among the lean and emaciated than among the well nourished.

Of more importance is the connective tissue which binds the kidney to the loin behind and to the various abdominal viscera above and below, and in front. In the latter position it is assisted to no inconsiderable degree by the peritoneum reflected over its anterior surface. In probably a majority of cases these connective-tissue adhesions and the disposition of the peritoneum are sufficient to maintain for a time the kidney in its place, even where causes operate which would dislocate an organ with less firm connections. These connections are not in themselves sufficient to withstand alone the weight of the kidney, but they are important from another point of view. Though they may not keep a kidney in its place when once it has become dislocated, they are mainly responsible for the symptoms which accompany a movable kidney and which may make life unendurable.

As to the great factor for maintaining the kidney in its proper position, His and Cunningham have clearly shown that the form of the kidney itself and the influences exerted upon it during life, or rather in the unopened body, vary very materially from what is usually observed in the dissecting-room.

Professor Cunningham thus describes the results of his study on the kidney. In every case and on both sides there is on the anterior surface a point of maximum convexity, a place where the kidney substance is raised in the form of a marked prominence or bulging, which may slowly rise from all sides to a blunt summit, as is usually the case in the left kidney, or which may extend across the anterior surface in the form of a rounded ridge, as happens more commonly in the case of the right kidney. Above and below this eminence the anterior surface falls away towards each extremity in the form of an

inclined or sloping plane of greater or less obliquity. These impressed districts indicate direct pressure exercised on the anterior surface of the kidney in two directions, and the intervening eminence is the secondary result of this counter-pressure. Upon the upper inclined plane of the anterior surface of the left kidney are placed the supra-renal capsule, the stomach, and the spleen. These exercise a downward and a backward pressure. Upon the inferior inclined surface of the left kidney the counter-pressure is produced by the intestinal canal, which presses as a rule upwards and backwards. On the right side the upper inclined surface is occupied by the liver, whilst in contact with the lower inclined area is the colon. In many cases the colonic or inferior sloping surface presents a high degree of obliquity.

We see then, that on the right side we have two forces acting on the kidney: one, acting from above, presses the kidney downwards and backwards; the other, acting from below, presses the organ upwards and backwards. The resultant of these forces will be a force acting almost directly backwards, wedging, as it were, the kidney into the position it usually occupies. Now the pressure from above is practically constant; it varies somewhat with the position of the body, and also during respiration, but these variations do not really affect the question, for the liver, kidney and colon move together. Under these circumstances the relative position of the forces is practically unaffected. The pressure from below varies to a much greater degree with the varying conditions of the intestine itself; it diminishes when the bowels are empty; it increases with flatulent distention; still the general direction of the pressure, upwards and backwards, on the inferior inclined plane of the kidney, is maintained. These normal variations of the two forces seem to have no greater effect than to alter slightly the contour of the kidney. In one kidney we find the transverse ridge on the anterior surface near the middle of the organ; in another we find it below the junction of the middle and lower thirds.

But if the balance between these forces be lost, so that their resultant force acts in a more or less downward direction, it is easy to conceive how the kidney itself, aided by this downward force and by its own weight, would gradually sink, making a way for itself behind the peritoneum which lines the loin below it.

There are several ways in which this balance of pressure may be destroyed. An obvious example is after parturition. We know that normally the pressure within the abdomen is positive, but immediately, and for some days at any rate, after parturition, the pressure becomes negative. If during this period the patient assumes the erect posture, the pressure from above acts downwards and backwards unopposed, and unless the cellular connections round the kidney are sufficiently and unusually firm, the kidney must gradually yield to the combined forces and slip from its place. Each act of parturition, with shortened respites in bed, will increase this tendency, and it is difficult to understand how the kidney, having once slipped from the control of the colon, could ever regain accurately its relative position so as to be wedged between it and the liver, as we have seen it normally is. Probably a movable kidney, when it slips into place in the recumbent position, lies behind the colon and below the liver, its anterior surface being flattened, so that the wedging forces can no longer act.

Another method by which the balance of power may be destroyed is by traumatism. If by means of a violent shock, such as a fall from a height onto the feet, or by means of extreme pressure, as the passage of a cartwheel across the body, the kidney be forced downward out of its bed, the equilibrium of forces is disturbed, not to be again restored.

Besides the ridge and planes on the anterior surface, there are other markings on the kidney. The duodenum almost invariably rests upon the anterior surface of the kidney, and it gives rise to a very evident duodenal impression. The outer convex border of the kidney of both sides presents a marked thickening opposite the eminence on the anterior surface. In the neighborhood of this thickening a faint groove passing upwards indicates the place where the border of the kidney is "clasped" by the last rib. This is worthy of notice, as it supports those who advocate fixing a movable kidney to the last rib. The posterior surface of the kidney exhibits three well marked areas, which correspond respectively to the psoas internally, to the quadratus lumborum externally, and to the diaphragm above. Between the areas marked by the psoas and the quadratus lumborum muscles, dimples corresponding to the transverse processes of the lumbar vertebræ may sometimes be observed in spare subjects.

The symptoms of movable kidney are for convenience divided into three groups, appertaining respectively to the mobility of

both kidneys, to the mobility of the right kidney, and to that of the left.

In the first group are included a dragging pain in the abdomen, and a sense of weight in one or the other side, neuralgic pains in the loin or shooting down the thigh, fatigue on slight exertion, and general debility, which makes any effort a weariness to the flesh. Many of these symptoms may, with some justice perhaps, be attributed to the dragging upon the renal vessels and nerves.

The second group comprises those symptoms which are recognized in their severer form under the term "the gastric crises." In the milder form the chief complaint is indigestion, flatulence, and sometimes vomiting. The following points can generally be elicited: the indigestion does not depend on the kind of food taken—one patient told the writer she had made the round of all sorts of food, and that nothing had made any difference; pain generally comes on about one or two hours after food, and large quantities of gas are frequently belched up; the usual remedies for indigestion and flatulence are of little if any use; the only relief obtained is that by lying down. Such a train of symptoms should always suggest a movable kidney on the right side. These symptoms can be explained on purely mechanical grounds. In one case with such symptoms, operated on by the author, the kidney was found lying in the right iliac fossa attached to the descending portion of the duodenum; when the kidney fell toward the iliac fossa it had so dragged upon the duodenum as to kink it; it was obvious that in that state nothing could pass out of the stomach. The stomach was in a state of dilatation. The symptoms disappeared when the kidney was fixed in its normal position.

The normal relation of the descending duodenum is on the inner portion of the anterior surface; sometimes it covers more than half the surface of the kidney, but this is unusual. It occasionally lies on the renal vessels, not touching the kidney. The kidney and the vertical portion of the duodenum are bound together by connective tissue, which may sometimes be extremely lax and weak, sometimes may have a degree of strength. Both organs are retro-peritoneal. In many cases when the kidney slips, its attachment to the duodenum may be so slight and lax, or the surface in contact with the duodenum may be so small, that the kidney disengages itself from the duodenum, and may become freely movable in the abdomen, without in any way interfering with the gut. Under such circumstances we have, what is a not uncommon experience, a freely movable kidney presenting no symptoms—a condition very difficult to explain on the theories usually laid down. Where, however, there is close contact, as the kidney descends behind the peritoneum it gradually drags the duodenum with it and produces gastric symptoms. These gastric symptoms are not observed when the left kidney alone is at fault. The author operated on a case of left-kidney luxation and found the splenic flexure of the colon firmly fixed to the kidney; as this organ fell backward it carried the colon with it so that it became kinked, forming a narrow band and producing intractable constipation. Replacing the kidney cured the patient of her suffering.

As to treatment, nephrorrhaphy is, comparatively speaking, a safe operation. The author believes in suturing the organ to the twelfth rib, and prefers catgut. The capsule of the kidney should be divided at the place where it is proposed to pass the sutures, and should be partially stripped, and the capsule and the renal parenchyma sutured to the wound, or to the last rib if preferred. The patient should be kept lying in bed for at least six weeks.

REMOVAL OF TUMORS FROM THE URINARY BLADDER.

FENWICK (*Medical Press and Circular*, Oct. 9, 1895) states that the value of an intelligent and skillful electric cystoscopy in determining the presence and character of vesical tumors, and in indicating the propriety of removing them, is amply borne out by the results obtained in a series of cases in his practice. Although benign papillomata of the urinary bladder are characterized by the symptomless appearance of blood, causelessly and intermittently, in normal urine, there are some papillomata which evoke symptoms markedly resembling those of stone. This deviation from the classical type is due to the length of the pedicle and stalk, which favors the free excursion of the tumor and allows it to get swept into the orifice of the bladder and to act as a partial or complete plug. Benign papillomata, therefore, readily fall into two divisions—the non-obstructive and the obstructive. Of these, the former are by far the more eommon.

He holds very strongly that the calculus sound should not be employed in either class; in the non-obstructive group the symptoms are so definite and so dissimilar to stone that

its employment in males under fifty is not only useless but detrimental—after fifty, cases are encountered in which small smooth uric-acid stones, lodging behind an upraised prostate, produce symptoms similar to those of a benign growth. In the obstructive group of papillomata, a cross-examination of the onset-symptoms will permit of the diagnosis of pedicled tumor being made, rather than that of stone, and a distinct danger is avoided if the patient's bladder be not interfered with: backward renal pressure has already been exerted by the plugging, there is always more or less residual urine, and the sound or the catheter is extremely prone to induce cysto-pyelitis.

In all cases in which a vesical growth is suspected, it is much wiser to employ the cystoscope in a period of calm between the attacks of hematuria, and to arrange that the bladder be full of urine at the time. In all cases of growth, if the bladder has not been meddled with, the urine in these intervals will be seen to be quite clear and the growths are exhibited to their best advantage. Failing a cystoscopy, a finger-sized supra-pubic opening is the best method of examination.

The best results have been obtained in cases which have not been sounded or catheterized. The true surgery is to make the operation coincidently with the examination. All those cases in which the operation has been performed immediately after the cystoscopy have done well; and these remarks apply equally to operations for the removal of stone from the bladder.

Women seem more prone to produce pedicled papillomata than men. Many of these growths can be cleanly removed through the dilated urethra, but the surgeon should always obtain permission to operate through the vaginal septum or supra-pubically, in case he should find that the base is extensive or the pedicle very thick. In men, the only certain surgical route is the supra pubic.

It is advisable in every case of subsessile or pedicled growth to remove the base cleanly, either by cutting or by crushing and cutting. The curette is only indicated in large sessile patches or secondary minute splashes. The bleeding from the base of the ablated tumor should be arrested before the patient leaves the table; the best means to effect this is probably a ligature, left hanging out of the bladder, or the application of the hot iron through a Keith tube.

Munching or squeezing of the healthy mucous membrane in the neighborhood of the growth fosters the subsequent appearance of growths in the traumatized areas. It is questionable whether the removal of a small sessile patch is advisable in the male before thirty-five years of age, as the rate of growth of such patches is often very slow. To determine this question, the cystoscope is of the utmost value. The longer the history of a non-obstructive tumor, the denser will its structure be.

The hard, slow-growing, single button of carcinoma can be removed with a fair prospect of successful delay in the course of the disease, provided the base and the submucous tissue beneath the tumor be removed with the knife. Munching the surface of a carcinoma and leaving the base is tantamount to an increase of the rapidity of its growth.

Malignant growths situated on or near the trigone do not repay removal, and always resent interference. If they obstruct, they had better be treated by supra-pubic drainage. All infiltrating growths can be detected by rectal or bimanual examination under ether. Multiple or "contact" growths, as discovered by the cystoscope, are inoperable. Small, single, indolent, malignant growths may be removed even when they have so far advanced as to become glued to the muscle-coat, provided the entire thickness of the subjacent bladder-wall be resected with them; this is, of course, only possible in the anterior, lateral, or posterior wall of the middle and upper zones. When the peritoneum is included in the ablation, free drainage of the bladder must be maintained in order to afford the bladder wound time to heal.

The seventy ablations which form the basis of Fenwick's paper include recurrences. He has had five deaths, two as the direct result of the operation, three as the result of renal complications in carcinomatous cases at or about the third week after operation.

A NEW VIEW OF THE TREATMENT OF VOMITING AFTER CHLOROFORM ANESTHESIA.

In the *Revue de Chirurgie* for September, M. Lewin relates his experience with the use of vinegar to prevent vomiting, in one hundred and seventy-four cases of chloroform anesthesia. In one hundred and twenty-five cases he obtained complete success, no vomiting of any kind having been produced. In forty-nine cases there was vomiting, but it was generally slight and the rejected material was rather viscous. The method should be very carefully carried out, in order to insure

good results. It is known that chloroform is eliminated almost exclusively through the lungs, partly as free chloroform and partly as formic acid and chlorine; the chlorine exercises an irritating action on the larynx and the trachea, and this is one of the principal causes of the vomiting. When a cloth saturated with vinegar is held over the nostrils, the chlorine combines with the acetic acid as fast as it is evolved, and forms trichloracetic acid.

It is very dangerous to use pure chloroform, and all medicinal chloroform should contain a certain quantity of alcohol, which renders its decomposition during narcosis more difficult. The dehydrating action of the anesthetic influences the endothelium of the blood-vessels and causes coagulation of the blood, to which the slackening of the circulatory movement and the feeble activity of the chemico-biological phenomena in the capillaries also contribute. Hence the wisdom of having the patient breathe air heavily laden with moisture, after the action of the chloroform is suspended. Under such circumstances acetic acid is recommended by the author as a powerful factor in restoring to the blood its normal fluidity, owing to a property that it derives from the water it contains, and to its energetic power of destroying the fibrin. Moreover, acids in general are stimulants of the respiratory tract. The foregoing considerations seem sufficient to explain the phenomena, without bringing forward a hypothetical action of the vinegar, or of acids in general, on the vomiting centre, by the intervention of the vaso-motor nerves.

The following observations were made in cases where this treatment was employed. Immediately after the application of the vinegar the pulse became strong, respiration grew deeper, the face regained a little color, and the corneal conjunctiva became bright. The appetite returned at the end of a short time, and the patients occasionally complained of hunger on the very day of the operation; frequently they did not suffer at all from the general uneasiness which nearly always follows chloroform anesthesia. It does not follow from this, says M. Lewin, that the application of the vinegar always suppresses the vomiting, for, in certain cases where the patients are very nervous, or are suffering from affections of the lungs or of the stomach, vomiting may occur in spite of the treatment.

The method of application is as follows: A piece of linen of about the size of a napkin is saturated with vinegar and lightly wrung out; it is then placed on the patient's face, over the mask, which is afterward carefully withdrawn—care being taken not to allow the air to gain access to the face too suddenly, for it ought to pass through the linen cloth before being inhaled. This cloth must be kept on as long as possible—three hours at least, and better still during the entire day, for occasionally the presence of chloroform in the expired air has been observed for more than two days after the narcosis. If the cloth is removed too soon, nausea will set in; if it dries very rapidly, it must then be replaced immediately with a fresh one, which is put over the first cloth before the latter is drawn away, in order to prevent the air from touching the face. If the wet cloth is annoying to the patient, it may be held away from the face with a mask. It is of the greatest importance to conform to these rules, for failure to observe them has prevented good results from following the application of the vinegar. In administering chloroform it is preferable to use small doses, which is the only rational method, for the mask should not be raised during chloroformization, whereas by the method of large doses it is often necessary to lift the mask after having produced a profound narcosis, and in this way the air reaches the patient's face too suddenly and causes nausea and vomiting, sometimes during the operation, sometimes after it.

CONTUSIONS OF THE LUNGS.

Contusions of the lungs, without wounds of the chest-walls or fracture or dislocation of the ribs, are not rare accidents, yet the text-books say nothing about them. It is, therefore, of interest briefly to review the main points brought out in an instructive paper on this subject by PROF. JOHN PARMENTER (*Buffalo Medical Journal*, October, 1895). Every organ—the heart, the pericardium, the aorta, and the esophagus—has been injured by apparently trivial blows on the chest, and the lungs do not escape. The elasticity of the chest-walls permits a considerable incurve and rebound without permanent injury. The elastic lung would also escape, were it not, as Gosselin has pointed out, that a person about to be hit instinctively closes his glottis, prevents the escape of air under the impulse of the blow, and makes the lung, for the time being, a solid body. The delicacy of the tissues, and especially of the capillary blood-vessels and air-sacs, together

with the fact that the two pleural surfaces are in exact apposition in a normal state, suffices to explain the serious nature of these injuries.

Jobert distinguishes three degrees of bruises. In the first the capillaries only are ruptured; the pulmonary tissue is not torn. In the second the alveoli, bronchioles and vessels are torn, and blood depots are scattered here and there through the lung. In the third the bronchi and large vessels are torn. Bruises of the first and second degree are usually recovered from, but patients often die very rapidly from those of the third. Certain complications — chief among which are hemothorax, pneumothorax, and emphysema—are common in severe contusions of the lung.

The symptoms in a severe case are those of shock and collapse, with dyspnea and profuse hemoptysis. There are sonorous râles, absence of vesicular murmur, with amphoric breathing and metallic tinkling.

Various complications are almost certain to occur in a severe case. They are bronchopneumonia, traumatic pneumonia, gangrene, pleurisy, etc.

The prognosis depends on the degree and extent of the injury, and its complications. Recovery follows if the lesions remain aseptic, and they usually do, even if hemothorax and pneumothorax are present.

In the treatment of the graver forms of contusions of the lungs, the shock must be combated by hypodermatic injections of brandy and ether, and the application of warmth to the body. For the pain and dyspnea, morphia subcutaneously often acts magically, and may be assisted by the use of cold locally. The hemorrhage frequently demands immediate attention. Auto-transfusion by elevating and bandaging the patient's extremities should be at once employed. If this, with absolute rest in the recumbent position, does not relieve the bleeding, and the dyspnea and cardiac embarrassment increase, with a medium-sized trocar and using the strictest antiseptic precautions enough blood may be removed from the chest cavity to diminish the pressure. If, as is frequently the case, the cannula becomes clogged with clotted blood, we must operate as for empyema and turn out the clots. Unfortunately, this frequently starts up the hemorrhage again, and is only to be resorted to when the patient's life is in imminent danger.

Pneumothorax can be relieved by paracentesis. Emphysema requires long and deep incisions into the swollen area, followed by judicious pressure.—*International Journal of Surgery*, November, 1895.

SERO-THERAPY IN THE TREATMENT OF CANCER.

The favorable results reported by Emmerich and Scholl have already been quoted in the THERAPEUTIC GAZETTE, and it will be remembered that these scientists claim to have found in the serum of erysipelas a specific remedy for cancerous growths. The treatment, according to them, was harmless and some of the cures were astonishing. According to BRUNS (quoted by the *Journal de Médecine et de Chirurgie*, Nov. 25, 1895), these results are not to be realized. He treated five cases—four of carcinoma or sarcoma and one of malignant lymphoma. The diagnosis was previously made by excision of a portion of the growth. In the first case, a man of fifty-seven, operated on for lupus of the face and exhibiting lymphatic tumor at the angle of the jaw, showed no results from the injection. In the second case, a man of sixty, suffering from epithelioma of the lower tonsil and metastatic tumors of the neck, received three injections of 2, 3, and 4 cubic centimeters of serum. The treatment had to be discontinued because albuminuria developed. Under the microscope granular casts were found. The third case, a man suffering from cancer of the parotid, received eight injections. The progress of the disease was steadily towards a fatal termination. There was no alteration in the tumor. The fourth case, a woman suffering from inoperable scirrhus of the left breast, with metastases of the axillary and supra-clavicular glands, received injections of progressively increasing strength. A few minutes after the injection of 16 cubic centimeters she became dyspneic and cyanosed, with frequent, irregular, and feeble pulse. There was no change in the tumor. The fifth case, a man of thirty-one, suffered from spindle-celled sarcoma of the temporal region. Alarming respiratory symptoms developed after injection; the tumor steadily grew. Six cases suffering from malignant lymphoma of the neck received seventeen injections and twice developed dyspneic symptoms. In not a single case did the injections have the slightest influence upon the growth of the tumor.

Bruns, in examining the serum, found that it was not perfectly sterile. This finding is

corroborated by the case of Freymuth, in which erysipelas developed.

Emmerich and Scholl stated that Bruns's failure was due to the fact that he employed a negative serum and not that which they had finally adopted. They have never observed the complications reported by Bruns, and they verified the sterility of their serum by repeated culture. Alarming symptoms developing immediately after injection are certainly due to bad technique—for instance, the driving of the injection into vessels. They hold that there are in reality no dangers by this method of treatment. As for failure to get results, they believe the treatment was not long enough continued.

VAGINAL EXTIRPATION OF UTERUS AFTER LABOR.

CHROBAK (*Centralbl. für Gynaek.*, No. 21, 1895) advocates this practice in cases of uncontrollable flooding where rupture is suspected, though he admits that the only two cases in which he acted on this principle ended fatally. In one case, a placenta prævia labor, violent hemorrhage set in during delivery, and a laceration involving the cervix was detected. A tampon was applied; this rapidly became soaked, and a second was firmly packed into the uterine cavity. Hemorrhage continued, so that Chrobak decided on removing the uterus through the vagina, as that procedure seemed to him simpler than abdominal hysterectomy. He states that the operation was not very difficult. The uterus was nearly six inches long. As it proved difficult to extract, a piece two fingers'-breadth wide was cut, like a slice made in an orange, out of the anterior wall; then the organ was easily drawn out of the vagina. There was very little hemorrhage during the removal of the uterus. Complete rupture of its wall was discovered; the laceration had apparently been enlarged when the second tampon was applied. The patient died. No details of the second case are given. In one case the whole operation was done in four, and in the other in eight, minutes. So far as facility of extraction is concerned, Chrobak considers his experience "encouraging."—*British Medical Journal*, July 13, 1895.

THE SURGICAL TREATMENT OF MEDICAL INTRA-CRANIAL LESIONS.

ANGEL MONEY (*Intercolonial Quarterly Journal of Medicine and Surgery*, May, 1895), in a paper on "The Surgical Treatment of Medical Cases of Profound Loss of Consciousness," suggests that the time has come when radical measures may be tried for cases of this kind, which are simply permitted to die. Intracranial hemorrhage is regarded as a very natural accident in Bright's disease, atheroma, and hemorrhagic pachymeningitis. When the hemorrhage occurs in other situations than the head, death need not follow for some months, and even years, and if only a few extra weeks of conscious life can be attained by any means, such means, it is held, ought to be adopted. In the author's opinion, direct operation on the brain is preferable to ligature of the carotid artery. The diagnosis can thus be verified, and there is less risk of a fatal issue as the direct result of surgical interference. Ingravescent apoplexy due to cerebral hemorrhage may have its essential features simulated by embolism and thrombosis of cerebral vessels. In cases of hematoma of the dura mater an exploratory incision through the dura mater might afford temporary relief to the urgent head-symptoms and clear up the nature of the case. A case is recorded of cerebral hemorrhage into the right hemisphere as an illustration of the class of lesions in which, the author thinks, it would be the right thing to try the effect of craniotomy. In considering what would have happened had the hemorrhagic area been exposed and drained, he holds that the patient's condition and chances could have been rendered no worse by any kind of operative interference carried out with the usual precautions of modern surgery.—*British Medical Journal*, July 13, 1895.

PISTOL-SHOT WOUND OF THE ABDOMEN.

TAYLOR (*Journal of Practice*, No. 7, vol. ix) reports the case of a young man shot through the abdomen and exhibiting primarily but little shock, who was able to walk half a mile to his home and to retire to bed unassisted. Two or three hours after the injury, depression became marked, and exploratory incision along the track of the bullet showed that it had entered the peritoneal cavity and had perforated the left lobe of the liver. The wounds in the liver were bleeding freely. The abdominal cavity was flushed with hot saline solution and an unsuccessful attempt was made to stop the liver hemorrhage with deep sutures. This method was a signal failure, and strips of iodoform gauze were packed into the liver, the ends being brought out of the abdominal incision. The patient

was alarmingly collapsed, but was restored by subcutaneous transfusion of saline solution. In twenty-four hours the gauze was removed. Intestinal paresis, however, developed and the patient perished, the pulse never running over 100. Death was found to be due to septic peritonitis.

LIGATION OF THE SPERMATIC CORD.

ALLESSANDRI (*Policlinic*, 1895, No. 9), as the result of an experimental investigation upon the ligation of the spermatic cord, either as a whole or in part, comes to the following conclusions: Ligating the vas deferens is followed after a long time by atrophy of the testicles and epididymis; parenchyma shows fatty degeneration, and connective tissue increases. Ligature of the veins causes atrophy; ligature of the deferential artery also causes this result, but more slowly. Ligature of the internal spermatic artery, or the pampiniform plexus alone, causes some changes of nutrition, but these are limited. Ligature of the spermatic artery and part of the veins causes hemorrhagic infarct and degeneration, with epithelial death, and increase of connective tissue. The ligature of the deferential artery alone causes no injury. Excision of the nerve-fibres causes coagulation necrosis of the epithelium of the testicle and epididymis in isolated spots.

REMOVAL OF A PIECE OF PYLORIC MUCOUS MEMBRANE BY THE STOMACH-TUBE.

EBSTEIN (*American Journal of the Medical Sciences*) reports a case in which this accident happened, the fragment being found in the fenestrum of the tube. The case was one of chronic peritonitis with strictures and dilatations of the duodenum. Death occurred from septic peritonitis four days after a laparotomy. Neither loss of tissue nor cicatrix could be found in the stomach. Ebstein believes this accident to be much more frequent than is usually supposed. Position and size of the stomach, and, as in the case reported, adhesion with neighboring organs, favor the occurrence. The author advises distention before passing the sound, in order to be able to form an idea of the extent and configuration of the stomach. The sound must be sufficiently thin, and must be removed slowly and while water is allowed to run in. The occurrence of vomiting while the tube is in the stomach necessitates special caution.

VAGINAL HYSTERECTOMY BY GALVANO-CAUTERY.

BYRNE (*American Journal of Obstetrics*, October, 1895), in a paper upon this topic, giving very fully the operative details, concludes with the statement that, having now demonstrated the practicability of performing these important operations by the aid of the galvano-cautery, and to the exclusion of all ordinary cutting instruments, gynecologists who fail to take advantage of a method so safe and yet so promising assume the grave responsibility of withholding from the afflicted the most reliable means through which a cure, or at least a long respite from suffering and death, may reasonably be assured.

NEURALGIA OF THE KIDNEY.

SENATOR (*Berliner Klin. Woch.*, 1895, No. 13) describes cases of severe intermittent kidney colic in which operation has shown apparently a normally placed kidney without any perceptible disease. Nephrectomy and nephrotomy have often given relief, although no disease has been found. Operative treatment of these cases should be confined to nephrotomy as the last resort. This may be of service even in the neuralgias of tabes or of hysteria.

CASTRATION FOR HYPERTROPHIED PROSTATE.

KUMMEL (*Berliner Klinik*, 1895, heft 86) has performed castration for eight cases of prostatic hypertrophy, and also collected fifty-nine other cases. As a result of his experience, he holds that the operation is the true remedy. He has never noticed psychoses —such, for instance, as Fauls reports,—and gets his patients out of bed the day after the operation.

Reviews.

THE INTERNATIONAL ENCYCLOPÆDIA OF SURGERY. A Systematic Treatise on the Theory and Practice of Surgery by Authors of Various Nations. Edited by John Ashhurst, Jr., M.D., LL.D. Illustrated with chromo-lithographs and woodcuts. In seven volumes. Vol. VII (Supplementary Volume).
New York: William Wood & Co., 1895.

The editor states that the object of this supplementary volume is to furnish the readers of the International Encylopædia of Surgery a brief but sufficient account of such additions to both surgical science and surgi-

cal art as have been brought forward during the seven years which have elapsed since the revised edition of the original book was published, and as have seemed of sufficient importance to justify their incorporation in a work of this character, which makes no claim to be an ephemeris of theoretic novelties, but rather to be a trustworthy digest of accepted and established facts. The accomplishment of this object has in the main been entrusted to worthy hands.

Ernst, in the twenty-eight pages devoted to Inflammation, has well epitomized the advance of knowledge in this direction. Kammerer writes on Wounds and Wound Treatment; he describes the methods ordinarily in use for the disinfection of the hands, preparation of ligatures, application of sutures, etc.

Kiliani reviews the bacteriology of erysipelas, pyemia, and septicemia; he states that in the treatment of erysipelas we have no remedy which is even reasonably reliable,—the local use of ichthyol is not even mentioned; the effect of erysipelas on neoplasms is very briefly considered.

Conner describes the missiles of the modern rifle, the wounds produced by such weapons, and the treatment applicable in accordance with modern antiseptic methods.

Packard, in a consideration of poisonous wounds, does not present all of the modern testimony for and against the antidotal effect of certain of the remedies advocated,—strychnia, for instance,—and leaves the reader in some doubt as to the advisability of using these remedies in certain cases.

Under the caption of Hydrophobia is found an interesting paragraph upon the mad-stone.

In the few pages devoted to Scrofula and Tuberculosis, Forchheimer has well succeeded in condensing the knowledge acquired in the last few years. In such a work as this, paragraphs upon the antiquity, frequency and diagnosis of rachitis might well have been omitted. The article by Smith is, however, excellent, especially the section upon medical treatment.

In the section upon Anesthetics and Anesthesia the work of the Hyderabad Commission and of Hare and Thornton is quoted. It is interesting to note that the misstatement in regard to the greater safety of chloroform as an anesthetic for patients suffering from diseases of the kidney is not here repeated.

The editor, in considering Amputations, states that since the appearance of his article on this subject in the first volume of this work he has adopted what is known as the antiseptic method in a simplified form. He employs catgut ligatures sterilized with juniper oil and alcohol—a method which does not produce a sterile gut,—sutures with silver wire, and drains with india-rubber tubes of large calibre.

Several pages of tables are given, showing that the author's mortality has been reduced from 29.3 to 20 per cent. since the introduction of antiseptic methods.

In the section on Tumors, by Curtis, there is, of course, a consideration of the alleged parasitic origin of malignant growths. Recent advances in etiology, diagnosis and surgical treatment receive due notice.

The parasitic nature of gonorrhea, and the abortive and antiseptic treatments, are briefly but clearly described by White.

Sturgis writes on Chancroid, presenting the most recent bacteriology of this affection, and discussing treatment. To those familiar with Van Harlingen's admirable article upon Syphilis, it would naturally be expected that the author would have but little to add in this supplementary volume.

Cantrell contributes an excellent summary upon the surgical diseases of the skin and its appendages.

Dulles writes upon Diseases of the Bones, in his customary clear, scholarly fashion.

Lovett writes a valuable chapter upon Disease of the Joints, describing modern orthopedic treatment and the results which may be expected from it.

Nancrede's section on Injuries of the Head is one of the best in the book.

Diseases of the Breast, by Maurice Richardson; Injuries and Diseases of the Abdomen, by Vander Veer; and Injuries and Diseases of the Male Genital Organs, are all chapters of more than ordinary interest and excellence.

PREGNANCY, LABOR, AND THE PUERPERAL STATE. By Egbert H. Grandin, M.D, and George W. Jarmon, M.D. Illustrated with photographic plates.

Philadelphia: The F. A. Davis Co., 1895.

Pictorial additions to all kinds of medical work are distinctly the order of the day, and undoubtedly in many instances add very materially to the value of the text which they accompany. As indicated in the title of this volume, there are no less than forty-one photographic plates in the space of 254 pages of text, and as these plates are full-page illustrations they give a large amount of detail and indicate very clearly the methods which the authors desire to recommend. The only

plate in the volume which is of little value and mars the otherwise perfect series of illustrations, is the second one, which is supposed to illustrate the mammary signs of pregnancy, but does not do this at all as a colored illustration should. There is nothing particularly new in the text, but mention of some of the various illustrations will give an idea of the ground which is carefully covered. The most noteworthy of these are the plates illustrating how to palpate the presenting part at the brim; the sites of maximum intensity of the fetal heart-sounds in the various presentations; the various presentations themselves; the method of catheterizing the puerperal female; the processes of delivery; the treatment of the puerperal female by means of an abdominal binder and vulvar pad; and the various measures of artificial respiration which are used for the purpose of resuscitating children suffering from asphyxia following birth. The book should be placed in the hands of every young obstetrician, and is one which will add very much to his comfort and his information when he is called to his first case of labor. It is to be particularly recommended to this class of practitioners rather than to those who by long experience have acquired settled ideas as to the conditions they may meet or the treatment they should institute.

OUTLINES OF MATERIA MEDICA AND PHARMACOLOGY. A Text-book for Students. By H. M. Bracken, M.D.
Philadelphia: P. Blakiston, Son & Co., 1895.

We are told in the preface that this book is the outgrowth of notes arranged in 1893 for the medical students at the University of Minnesota; or, in other words, it is evidently a carefully prepared edition of the notes employed by Dr. Bracken in teaching his class. After quite a long introduction, in which the division of various medicinal agents is given and the official preparations are discussed, the author passes on to a consideration of drugs, taking up the acids, the metals, the non-metallic elements, the carbon compounds, and the drugs from the animal and vegetable kingdoms, using a classification therefor that is based upon the chemistry of the various medicinal agents. We do not think this is a very practical classification for clinical work. The text describes scarcely with sufficient fullness the physiological action and therapeutics of the drugs considered, but it doubtless affords a useful guide to the students who are fortunate enough to attend Dr. Bracken's lectures, since the major points which he considers are here summarized, and about them the student can group in his memory the nicer points to which attention is called by the lecturer.

PEDIATRICS: THE HYGIENIC AND MEDICINAL TREATMENT OF CHILDREN. By Thomas Morgan Rotch, M.D.
Philadelphia: J. B. Lippincott Co., 1895.

Of the comparatively few physicians in this country who have devoted themselves to the study of the diseases of children within the last few years, Dr. Rotch may be considered a leader, for he has not only contributed of his clinical experience to medical literature, but has enriched the knowledge of the profession by original investigations in numerous directions, the chief of which is, however, his study of the artificial feeding of children.

The volume before us is one of no less than 1100 large octavo pages, and is copiously illustrated, chiefly by means of photo-engravings. Some of these illustrations add much to the value of the text, but others are really of very little service. Thus we can see no particular advantage in Fig. 531 of a child suffering from general tuberculosis: close examination shows marked emaciation, but the cut is so imperfect that this is not readily shown. On the other hand the illustrations representing the outlines of the various thoracic and abdominal viscera in health and disease, and the beautiful colored plates in the chapter on The Blood and in regard to vaccination, add very materially to the value of the volume.

The chapter on The Blood will prove to many readers the most interesting and valuable, for Dr. Rotch has brought it up to the very latest date in his discussion of the subject.

The other articles in the volume which seem to us worthy of especial note are those upon the Care of Prematurely Born Infants, Treatment of the New-born, Eruptive Diseases, Pericarditis, and Diphtheria. An immense amount of information is brought together from all sources and added to that obtained by the author in his individual practice, and we think that this to a certain extent might have been decreased in bulk.

The style of the author is clear but not concise, and he always readily expresses the thoughts he wishes to convey.

Taking it all in all, the volume is of the greatest credit, not only to its author but to

American medicine, and we congratulate Dr. Rotch upon the completion of a book which will further decidedly increase his enviable reputation as an authority in children's diseases.

PRINCIPLES AND PRACTICE OF MEDICINE. Designed for the Use of Practitioners and Students of Medicine. By William Osler, M.D. Second edition.
New York: D. Appleton, 1895.

The extraordinary success of the first edition of Dr. Osler's book, both in America and England, was due to the fact that the profession recognized in its author a clinical observer who possessed not only wide experience but the ability to draw from that experience the most valuable facts for the benefit of his professional brethren. In the present edition Dr. Osler has taken the opportunity to re-write quite a large part of the articles, to remove many of the mistakes and blemishes which it is almost impossible to exclude from a first edition of so large a work, and to introduce information concerning recent advances in clinical medicine which have become recognized as valuable additions to our medical knowledge. This is particularly true of the articles upon Typhoid Fever, Malarial Fever, and Diphtheria. One of the chief omissions has been the exclusion of the methods of clinical examination of the stomach which were discussed in the first volume.

Dr. Osler's book on "Practice" is naturally one which deals with the pathological aspect of clinical medicine rather than with its therapeutics, and it will remain a favorite with active clinical investigators so long as it so ably maintains the standard which its author set up when the book first appeared.

THE ART OF COMPOUNDING. A Text-book for Students and a Reference Book for Pharmacists at the Prescription Counter. By Wilbur L. Scoville, Ph.G.
Philadelphia: P. Blakiston, Son & Co., 1895.

This is a book that does exactly what its title tells us the author wishes it to do, for it clearly describes and directs the methods by which physicians, students and pharmacists prepare the proper medicinal compounds, official or otherwise. In the early part of the volume much good advice is given as to the technique and methods of compounding, and tables are introduced showing the number of drops in a fluidrachm, and the Latin terms used in prescriptions. Directions are also given as to the means by which cleanliness of pharmaceutical utensils is to be attained, and following this are directions for working formulæ for the preparation of mixtures, emulsions, pills, and similar pharmaceutical products.

The book is worthy of cordial recommendation to medical students and students of pharmacy, and we believe it will become popular as soon as this body of men have an opportunity of appreciating its practical value.

MANUAL OF GYNECOLOGY. By Henry T. Byford, M.D. Containing 234 illustrations, many of which are original.
Philadelphia: P. Blakiston, Son & Co., 1895.

The author has written this book, not for the specialist, but rather for the student, to be used during his college course and afterward during his first years of practice, as a guide for the less serious gynecological complaints which he is likely to be called upon to treat. By an excellent plan the essentials for the student, and the amplifications and details for the practitioner, are differentiated by the printing of the former in large type. Especial pride has been taken in the arrangement of the subject matter, the author claiming that it has the peculiarity of holding the student's interest better than the classification of most text-books. He states that "when a course begins with a consideration of the external genitals, the student, after a time, becomes impatient for the more interesting subjects."

A perusal of the work shows it to be eminently practical and more comprehensive than would have been suspected from the modest preface. It is likely to prove extremely serviceable to the class for whom it is written.

HANDBOOK OF THE DIAGNOSIS AND TREATMENT OF SKIN DISEASES. By Arthur Van Harlingen, Ph. B. (Yale), M.D. Third edition, enlarged and revised. With sixty illustrations, several of which are in colors.
Philadephia: P. Blakiston, Son & Co., 1895.

This work of Van Harlingen's deserves unqualified praise. It is written for the practitioner, hence but little space is given to pathology, especial attention being devoted to diagnosis and treatment. While a discussion of the commoner and more troublesome skin diseases occupies the greater portion of the book, the rare diseases are none the less included, so that the book, considering its size, is remarkably comprehensive. For the purposes of the practicing physician it could not possibly have been better planned. To all who have not become specialized—and

this applies to the great bulk of the profession—such a work as this would seem to be absolutely essential. So far as the reviewer knows, there is not one in its class which favorably compares with this in clearness of expression and soundness of teaching.

PRACTICAL URINALYSIS AND URINARY DIAGNOSIS. A Manual for the Use of Physicians, Surgeons, and Students. By Charles W. Purdy, M.D. Second, revised, edition.
Philadelphia: The F. A. Davis Co., 1895.

But a few months ago we had pleasure in cordially endorsing Dr. Purdy's book upon Urinary Analysis, and we are told that in this edition but little has been added to the text save what was necessary to fill omissions in its earlier publication. We have used Dr. Purdy's book considerably, and after doing so do not hesitate to state that it is probably the best clinical manual extant in regard to the study and examination of the urine in its relation to the diagnosis of disease. We trust that the second edition may be as well appreciated as its predecessor, if for no other reason than that its popularity will increase the knowledge of the profession in regard to the significance of urinary changes in disease, for the urine is a secretion too often ignored by the hurried practitioner in coming to the diagnosis of a case.

THE CARE AND FEEDING OF CHILDREN. A Catechism for the Use of Mothers and Children's Nurses. By L. Emmett Holt, M.D.
New York: D. Appleton & Co., 1894.

Before criticising a book, the reviewer should read the author's preface. In this particular instance the preface states that the catechism under discussion was prepared as a manual to be employed in the Practical Training School for Nursery Maids, and that it is published at the request of many friends in the hope that it will serve a useful purpose in similar institutions, and that it may also be of value to mothers and may be put in the hands of the ordinary child's nurse. The teaching is in the form of questions and answers and is extremely practical, dealing mainly with essentials, encumbered by no unimportant details, and should admirably subserve the purpose for which it was prepared.

A HANDBOOK OF MEDICAL DIAGNOSIS FOR STUDENTS. By James Herrick, M.D. Illustrated.
Philadelphia: Lea Brothers & Co., 1895.

This is a small octavo volume of 424 pages, in which Dr. Herrick has very successfully condensed the main facts for the diagnosis of the various diseases commonly met with in the practice of medicine. At various places through the volume are comparative statements as to the chief diagnostic points of the diseases considered, and there are two colored plates illustrating the blood of malarial fever and the blood of severe anemia and leukemia. The illustrations are most of them borrowed from well known volumes, but are all good and appropriate.

Considering its size, and therefore the limits to which the author has subjected himself, we must regard the volume as a contribution to medical literature which will be useful to the students who obtain it and will add to the reputation of the author who has compiled it.

THE PHYSICIANS' VISITING LIST FOR 1896.
Philadelphia: P. Blakiston, Son & Co., 1895.

This well known Visiting List has been sent us for notice in the THERAPEUTIC GAZETTE. More space has been allowed in this edition for writing the names of patients and for memoranda, and a column has been added for the amount of weekly visits and for the ledger page. At the same time, the publishers state that they have endeavored to keep the bulk and price as small as heretofore. The List is published in several forms, and that for seventy-five and one hundred patients per week is divided into two volumes, one for each half of the year, so as to make a less bulky book for the pocket. As this is the forty-fifth year of the publication of this List, the publishers have learned by experience the needs of the physician.

THE MEDICAL RECORD VISITING LIST. 1896. New York.

This is a Visiting List very much like others with which we are familiar issued by the publishers of the *New York Medical Record*, and is arranged in such a way that the physician can keep an accurate account of the number of his visits to patients and other matters connected with daily practice. The first pages of the List are taken up with a calendar and a method of estimating the probable duration of pregnancy, a list of maximum doses of ordinary drugs, and similar interesting details. We notice that in the treatment of phosphorus poisoning nothing is said of the use of permanganate of potassium or peroxide of hydrogen. The List is well bound and will render good service to the physician.

Correspondence.

PARIS LETTER.

By A. J. Magnin, M.D.

Since the reading by Dr. Albert Robin of a paper on the numerous therapeutic properties of the glycero-phosphates, the profession in France has taken great interest in the good results obtained in many cases, and I myself, both in collaboration with Dr. Good, of Paris, and in my own practice, have so often had occasion to judge of their beneficial effects, that a few remarks on the subject may be of interest to your readers.

The diseases in which they can be used with advantage are the following:

First, functional disturbances of the nervous system, among which neurasthenia in all its forms holds the first place, whether it be due to excesses (physical and mental), to phosphaturia, to dyspepsia arising from insufficient gastric activity, to incomplete function of the intestines, or to diseases of the brain or spinal cord, and when depression and nervous asthenia constitute the chief clinical features.—Patients under the influence of the glycero-phosphates soon complain less of vertigo, headache (especially occipital pain), insomnia, muscular fatigue, and general inability to put forth mental or physical effort. Hysteria particularly seems to yield with comparative rapidity to active medication with the glycero-phosphates. As illustrative of the above statements, permit me briefly to report a case:

Mr. X., aged thirty. Insanity in the family. Physical condition excellent; no organic disease. Complains of constant excruciating pain in the back of the head and in the neck, of insomnia, and of unsteadiness of gait. Is distrustful of himself and of others; at times shuns the society of even intimate friends, dreading that he may commit some unaccountable act; he is often absolutely unable to write or read, and has frequent attacks of melancholia, with suicidal ideas.

A daily hypodermic injection of a solution of glycero-phosphate of soda is administered. At the end of six weeks, Mr. X. is able to write important business letters without effort; goes about enjoying himself and attending to his social duties; the pain and insomnia have completely disappeared.

The glycero-phosphates build up rapidly the impaired nervous system which is found during convalescence from all serious acute diseases, especially *grippe;* which exists in all forms of phosphaturia, excepting the form dependent on acid dyspepsia; and which accompanies muscular atrophy, particularly when of rheumatic origin. They relieve quickly and permanently the pain of chronic lumbago, sciatica, and locomotor ataxia. Some very remarkable cases of improvement in the last-mentioned disease have been reported: the intense suffering disappears in a few days, and many patients insist that after ten or twelve injections they can move with relative ease and certainty.

Dr. Robin quotes an interesting case of improvement in the treatment of Addison's disease. A workman, thirty-three years old, was brought to the hospital with characteristic symptoms of the complaint—he was unable to walk, vomited continuously, and suffered from a generalized feeling of cold. Fifty centigrammes of glycero-phosphate of soda were injected daily for one month. After remaining six weeks in hospital, he was able to return to work, having gained eight pounds in weight, recovered his appetite, and feeling well, although the bronzed color of skin and mucous membranes persisted. Whenever he feels weak he comes to have a few injections, and takes up his work again as before.

Second, the administration of the glycero-phosphates gives excellent results in all cases of organic impairment due to a lack of activity in the processes of nutrition and oxidation. In diabetes the general condition improves rapidly, and the quantity of sugar diminishes in a marked manner and at times disappears completely. I have personally had occasion to observe a number of such cases.

In albuminaria, due to chronic Bright's disease or to phosphaturia, accompanied by diminution of the urea, the results obtained are, as a rule, remarkable, *i. e.:* improvement in general health, increase in weight, diminution and sometimes disappearance of the albumin and of the excess of phosphates.

Patients suffering from anemia, chlorosis, chronic gout and rheumatism, with cachexia, pulmonary tuberculosis, senile debility, and persistent chronic dyspepsia, are greatly benefited by the administration of an appropriate form of the glycero-phosphates.

Third, in a great number of diseases of the bones, such as rachitis, osteomalacia, tubercular affections, and certain cases of fracture, the glycero-phosphates of lime and magnesia have rendered good service.

The most efficacious mode of administra-

tion is undoubtedly by hypodermic injection, and the best solution to use is one of glycero-phosphate of soda, although other salts have also been employed.

The *modus operandi* is the following: A metal or glass syringe, with a piston of rubber, having been thoroughly boiled, is filled with a sterilized solution of glycero-phosphate of soda, and one, two, or even three cubic centimeters are injected daily into the glutei muscles on either side. Two points are of the utmost importance: the syringe and needle must be *thoroughly* cleansed (prolonged boiling is the most convenient method), and the solution used must be perfectly aseptic. The latter contains, to each cubic centimeter, twenty centigrammes of glycero-phosphate of soda.

By observing absolutely the above precautions, abscesses and even spots of painful induration can always be avoided.

If necessary, as much as one gramme of glycero-phosphate of soda can be injected daily. If glycero-phosphate of lime be used, half the amount constitutes a full dose.

Internally the glycero-phosphates of soda, lime, magnesia, potash and iron are administered either in wafers, pills, or solution; they should be taken with meals, and combined with a little pepsin and maltine. The doses are from thirty centigrammes to one gramme a day for the glycero-phosphates of soda, potash, lime, and magnesia; from ten to thirty centigrammes for the iron salt.

One of the advantages of the hypodermic administration resides in the prolonged effect of the medication, even after treatment has ceased.

Speaking in a general way, the glycero-phosphates should not be used in diseases in which there is albuminuria or in which organic oxidations are above the average, such as acute gout or rheumatism, nor in affections in which there is hypersecretion of the liver and acute excitability of the nervous system.

I have obtained in several cases remarkable results in the cure of the impaired general condition due to acute or chronic alcoholism, by this method of treatment.

MANCHESTER LETTER.

By Robert Wild, M.D., M.Sc.

The most prominent feature of medical interest in this city at the present time is the question of Hospital Extension. The Royal Infirmary is now considering what is the best form for the much-needed increase of accommodation to take. The two chief obstetrical and gynecological hospitals are undergoing a process of amalgamation, with a view to the building of a large and complete lying-in hospital and a new hospital for women and children. The Skin Hospital has recently removed to larger premises in which a long-needed provision is made for in-patients. The medical school has also been largely extended by the provision of new laboratories and lecture theatres which are now in use, and more than double the previous accommodation. Among other departments the pharmacological laboratory has shared in the general extension, and a short account of it may be of interest to the readers of the Therapeutic Gazette.

The department consists of two large laboratories and three smaller rooms. One of the laboratories is used chiefly as a class-room for students and for practical demonstrations in pharmacology, a regular course of which is given during the summer session in illustration of the lecture course on systematic therapeutics. A small water-motor supplies the power for working the various recording drums, and this room also contains three incubators for testing the action of drugs upon the isolated organs of warm-blooded animals. The other laboratory is used entirely for the prosecution of original research by advanced workers under the direction of Professor Leech; the recording apparatus is driven by an electro-motor, and the laboratory is fitted with the apparatus and instruments required for the prosecution of various kinds of experimental work.

The smaller rooms comprise a professor's private room, which is also used for microscopical work, a departmental library, and a small photographic room which is used for the production of lecture diagrams, copying tracings, and other similar work.

There is in addition an extensive materia medica museum, and a separate pharmaceutical laboratory in which students are taught the practical details of pharmaceutical processes, and research work of a more strictly chemical character is carried on.

Professor Leech showed a patient at a recent meeting of the Medical Society, who had been under his care nineteen years previously, and who well illustrated the therapeutic value of prolonged rest in an apparently almost hopeless case of cervical pachymeningitis. The patient at fifteen years of age had an abscess at the back of the neck, from which a considerable-sized piece of bone was

discharged; then followed entire loss of power in arms and legs, rigidity of muscles, much exaggerated reflexes, and tremors; later on, the arm muscles wasted and there was characteristic deformity of the hands; there was also some anesthesia and incontinence of urine. The treatment adopted was complete rest, continued for nearly three years. He eventually recovered, and has remained well for sixteen years and able to do his regular work. The only signs of his past illness are a little deformity of the right hand and somewhat exaggerated reflexes.

In the discussion which followed, the opinion was expressed by the surgeons present that at the present time such a case would most certainly have been submitted to operation; and Professor Leech suggested that some of the cases which have recovered after surgical interference might very probably have been equally satisfactory had they been treated by rest alone; he believed that the treatment of such cases by complete rest was not, as a rule, given a fair trial, in that it rarely lasted for more than a year, whereas in his case two years elapsed before the patient could stand, and another year before walking was possible.

Professor Dreschfeld at the December meeting read a very interesting paper upon the "Etiology and Treatment of Malignant Endocarditis;" with regard to treatment he stated that in the more chronic cases he had found great benefit to result from the use of quinine in large doses, combined with the regular administration of arsenic. The quinine was given in doses of four or five grains or more three times a day, and the arsenic in doses of five minims of liquor arsenicalis three times a day and gradually increased up to the limit of toleration.

INTESTINAL OBSTRUCTION.

To the Editors of the THERAPEUTIC GAZETTE:

SIRS:—September 10, 1895, I was called to see Mrs. J. W., aged thirty-eight years, the mother of one child. I found upon arrival that the patient was a lady of medium height, corpulent, weighing 140 lbs. She had been attacked a few hours before with a chill of several minutes' duration, followed by severe griping pains in the abdominal region, and immediately thereafter an attack of purging and vomiting of more than ordinary violence. The temperature was subnormal, and the surface of the body was moist with a cold perspiration.

Not expecting any trouble of a serious nature, I made her comfortable and requested to be called again in case her condition should not improve. I was called the following evening and found the patient still very much distressed; the vomiting had continued at intervals; the diarrhea, however, had ceased, but she was now complaining of severe pain through the hypogastrium, especially acute upon the right side. I made a very careful examination, but, owing to the tenderness and her abundant development of adipose tissue, was unable to form any definite opinion of the case; so Dr. Geo. H. Gibson, of this city, was called, the patient was anesthetized, and we had little trouble in making a diagnosis of intestinal obstruction from fecal accumulation in the ascending and transverse colon. We were able to outline a tumor of considerable size, so hard that indentation was not perceptible from pressure through the vagina and counter-pressure over the tumor itself.

We introduced a rectal tube as high as the sigmoid flexure (the patient being in the knee-chest position), and injected about two quarts of very hot water, which was retained for some time but was finally discharged. The enema was repeated at intervals of four hours, under my direction, the water sometimes containing several ounces of sulphate of magnesia, but after seventy-two hours of complete failures I informed the family that surgical interference was indicated, and recommended an immediate operation. This was not looked upon with favor by those interested, and I was left to do the best I possibly could with the ordinary medical treatment in such cases.

The condition of the lady at this time was not good. Her temperature was subnormal, there was frequent vomiting of greenish mucus containing bile, and she was unable to retain the nourishment which she had taken "contrary to orders." There was suppression of urine, severe and continuous pain over the seat of the obstruction, and her skin assumed an icteric hue. Respirations were withheld as long as possible, to obviate pain. The cardiac pulsations were very rapid, but the pulse was full. There was an anxious expression of the countenance.

To allay pain and vomiting, she was given hypodermically morphine and atropine as often as necessary, also nitrate of strychnine one-fortieth grain to keep up the heart's action and to maintain the temperature; hot fomentations over right side of abdomen. Small quantities of beef peptonoids and egg-

albumen were administered per rectum at stated times during the day. This was the therapeutic method persisted in throughout, in order to sustain the patient. My main efforts, however, were directed to the seat of trouble. I repeated the enemas of water frequently, using a fountain syringe with a pressure of from eight to sixteen pounds; injected quantities of olive oil; inflated the bowel with air; but all to no purpose.

Believing that perhaps we might have a case of paralysis, I introduced a rectal electrode as high as possible, passing the faradic current to a sponge electrode placed over the abdominal prominence of the tumor. This procedure was repeated three times in one day, twenty minutes at each sitting; it had no other effect than to cause very excruciating pain, which would cease immediately when the current was removed.

Small enemas of glycerin and water, and of chloroform, were made use of, but all to no purpose. It must not be forgotten that she had received massage from the first.

At this time I conceived the idea of throwing high up into the colon about four drachms of the fluid extract of lobelia. I took an old stomach-tube and passed it the entire length, twenty-seven inches, above the sigmoid and as far as I could go with it; then, with the patient in the knee-chest position, I attached a fountain syringe and proceeded to inject the lobelia (four drachms to the pint). Withdrawing the tube, I held the enema back by a cotton tampon placed well up in the rectum, which was allowed to remain "for perhaps an hour." When the tampon was withdrawn it was followed at once by the discharge of the solution, accompanied by several pieces of feces. The action of the lobelia upon the patient was very depressing, so I dared not use it again.

Giving her time to rest sufficiently, I then administered an enema of ox-gall (one-half ounce to a pint of water) high up; this was retained for several hours, when it was rejected with a quantity of offensive and hardened feces. This procedure was repeated three times, and succeeded in dislodging the mass, fourteen days from the time I was first called.

I have made use of the ox-gall in this way often, in relieving the constipation of pregnancy, with very satisfactory results. I have also made use of it in one case of constipation in a child since treating the above case, and the results were very pleasing. The use of lobelia I think a little harsh, yet if used early in this case when the patient was stronger it might have been equally effective, and not have caused any exhaustion in the patient. I shall try it again when I get a stubborn case of chronic constipation.

Yours truly,

FRANK A. GREEDY, M.D.

DENVER, COLORADO.

Notes and Queries.

THE KOUMISS OF THE CAUCASUS.

The Caucasians designate under the name of "Kephyr" an acidulous beverage, lightly alcoholic, prepared by the action of a special ferment, known as "Grains of Kephyr," on milk. These grains are small yellowish-white masses, compact, elastic; when fresh they have a cartilaginous consistence; when dry they become hard, more friable, of a dirty yellow color, translucent (somewhat resembling tapioca or sago). They vary in size from a nut to a pinhead, and their surface is irregular and bosselated. Placed in water, they swell somewhat, become softer and of a whitish color.

The zoöglea encloses two species of bacteria and a yeast, the latter probably identical with the yeast of beer (the *Saccharomyces cerevisiæ*). One of these bacteria is in short, immobile rods—the lactic ferment of Pasteur (*Bacillus lacticus*); the other consists of long bacilli, slowly motile, often showing slight enlargements at their extremities—this, the *Bacillus caucasicus*, is special. The part played by these different bodies is for each most distinct. The *Bacillus lacticus* secretes a rennet which coagulates the casein of the milk, a process necessary to its ulterior transformation; it also furnishes a special *diastase*, which changes the lactose into maltose by a process of hydration, thus fitting it to undergo the alcoholic fermentation through the action of the yeast. The *Bacillus caucasicus*, through the medium of a *casease* which it secretes, dissolves the precipitated casein, transforming it into an albuminose.

The milk, at first opaque and holding in suspension flocculi of the precipitated casein, is now transformed into a transparent liquid, rich in peptones, slightly acid, and containing considerable carbonic dioxide and some alcohol, these last being produced by the yeast on the saccharine matter of the milk.—Translated from the French of E. Mace, by T. B. Rogers, Veterinarian.

—THE—

Therapeutic Gazette.

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Original Communications.

*THE SPECIAL INFLUENCE OF ALTITUDE UPON HEALTH, DISEASE, AND SANITATION.**

BY S. E. SOLLY, M.D.,
Colorado Springs, Colo.

In what material respect does a high climate, such as that of Colorado, differ from the low climates of the more eastern States? To answer this question as satisfactorily as the limitations of our present knowledge will allow, we must briefly recall the known physical and physiological facts in the case, glance at recent experiments, give a summary of clinical experience, draw logical deductions from these facts and corroborated experiences; and then consider how health, disease and sanitation are modified by altitude.

Looking first at the physical facts, we find there is one element only, but a most important one, which a high climate possesses and a low one does not—viz., diminished barometric pressure. While possessing also in an unusual degree and combination abundance of sunshine and pure, cool, dry air, it shares these more or less with other climates. Much speculation and various theories have been indulged in to explain the effects of reduced barometric pressure. When I first came to

* Read at the meeting of the American Public Health Association, held in Denver, October, 1895.

live in Colorado Springs, now some twenty-one years since, the solution to the problem was clouded by wrong conclusions drawn by the great traveler and scientist, Von Humboldt. Since then the physiologists have been at work and have given us a sure foundation upon which to lay in their proper order the facts gathered from observation.

With diminished barometric pressure we have of course less weight of atmosphere pressing upon the surface of the body, and this was for a long time thought to be important in accounting for the phenomena. It has since been shown, however, that as the pressure from the air within the body is equally diminished, and the laws regulating the diffusion of gases equalize the pressure throughout the body, there is no direct practical effect from diminished barometric pressure *per se*. Then, because with the lessened amount of air to each square inch of atmosphere there must also be a diminished amount of oxygen, the conclusion was wrongly drawn that it was the scarcity of oxygen which accounted for the shortness of breath, etc., and the other phenomena of mountain-sickness.

As the actual amount of oxygen, even at the greatest heights to which man has climbed, is always in excess of that needed for the blood to carry on its functions normally, this does not give the answer, which has at last been found to be, not lack of sufficient oxygen, but a low proportion of oxygen in each cubic foot of air inhaled. In short, the special effects of altitude are directly produced, neither by the reduced pressure of the atmosphere nor by the reduced amount of oxygen affecting the lungs and heart, but by *the reduction of oxygen-pressure.* When air is inhaled into the lungs, a certain proportion of the total amount of oxygen contained in this air is absorbed by the hemoglobin, which is that element of the blood that is contained in the red corpuscles and is the direct carrier of oxygen to the system. As each drop of hemoglobin can only take up oxygen in a certain proportion to the oxygen-pressure of the air, when the oxygen-pressure is lowered (as it is in elevated climates) discomfort ensues to the visitor because his blood is not sufficiently oxygenated at each ordinary breath. To remedy this he breathes faster, so as to get in more air and so more oxygen in a given space of time, and the heart has therefore to pump blood more frequently into the lungs, and his pulse beats faster. Such are the temporary remedies; but in time the chest becomes expanded so that more air is taken in at each breath, and the heart is stretched so that its cavities hold more blood, and its walls are thickened so that the muscle has more force to pump this increased amount of blood.

Nature's method of compensating for this deficiency does not stop here, however; a still more remarkable change takes place, in which lies the special therapeutic value of high climates for appropriate cases. This change is an increase in the amount of red corpuscles and hemoglobin, whereby the oxygen-absorbing power of the blood is largely increased, and in a definite ratio to the elevation. Some of the experiments which have established these facts will be briefly referred to.

Paul Bert, on examining the blood of the llama (the Peruvian mountain sheep), found that for every 100 Cc. of blood it absorbed an average of 20 Cc. of oxygen, while the sheep of the plains did not absorb more than an average of 15 Cc. for the same amount of blood. Viault, Muntz and others in various ways repeated and confirmed these experiments. That the increase in the number of red corpuscles and hemoglobin is due to the diminished atmospheric pressure, and not to the other accompanying conditions, was proved by Regnard, who at sea-level placed a rabbit under a bell-glass and reduced the atmospheric pressure until it was equivalent to an altitude of 9500 feet. Two bell-glasses were used together, so that the rabbit could be changed from one to the other when cleaning and disinfecting was required. The rabbit was kept in this atmosphere for a month, and then came out fat and healthy. The examination of its blood showed that it absorbed 21 Cc. of oxygen, while under normal conditions its blood and that of its fellows at sea-level could only absorb 17 Cc. These changes in the respiratory capacity were not completed under a month.

At the congress "Für Innere Medicin," held at Wiesbaden in April, 1893, Dr. Egger read a valuable paper upon "The Blood-changes in High Mountains." He begins by referring to the experiments of Viault, made at Merococha, Peru (altitude 14,275 feet), upon six persons, in which he found that after they had ascended from sea-level and remained three weeks the number of red corpuscles had increased from 5,000,000 to 8,000,000. He then passes on to detail his own experiments made at Arosa, altitude 5500 feet, during the summer of 1891, upon twenty-seven persons—twenty-one men and six women. In all there was a marked in-

crease of blood-corpuscles, the average increase being sixteen per cent., and it was greater among the tuberculous than among the sound persons. The diet and other conditions were kept the same. Like experiments upon nine rabbits showed seventeen per cent. increase. The increase was permanent, as the blood was retested in several cases some months later; and further, the blood of ten natives showed the same average in number of red corpuscles, viz., 7,000,000. Experiments upon six rabbits also demonstrated the fact that the increase was not in the capillaries or cutaneous vessels alone, but universal, being found in the carotid and femoral arteries.

He proves further that the increase was not due to the drier air of the high ground evaporating the serum and so increasing the blood density and therefore merely increasing the relative number of corpuscles, but was an actual increase. This was done by withdrawing blood from two rabbits on low ground, at Basle, treating it with the hematocrit, and then three weeks later doing the same experiment upon the same rabbits after transferring them to the high ground of Arosa. He thus found that the percentage of solid constituents in the blood examined was practically the same on high as on low ground. In five persons resident in Basle—three men and two women—who were suffering from marked oligocythemia (*i. e.*, scarcity of red corpuscles), there was after a few weeks' change to Arosa an increase from 5,000,000 to 6,000,000, and their disease was cured. He found also in healthy persons who returned from Arosa to low ground that the number of red corpuscles became normal again in three weeks, while with the anemic the increase would fall to normal but not below.

He also made experiments for hemoglobin, using Fleischl's hemoglobinometer, modified somewhat by Miescher. In eleven persons, a month after their transference to Arosa from sea-level, he found without exception 16.35 per cent. increase of hemoglobin, and the same was shown in three rabbits. He noted, however, that the hemoglobin was increased much more slowly than the corpuscles, and as this is exactly what takes place after a hemorrhage, when there is a rapid increase of red corpuscles followed by a gradual increase of hemoglobin, he argues that this is an additional proof that altitude increases the actual amount of both corpuscles and hemoglobin and is no mere relative or apparent increase.

Muntz, by experiments upon rabbits at sea-level on the Pic du Midi (9000 feet), found that the specific gravity of the blood was increased by altitude, as was also the amount of iron. Viault in 1890 made similar confirmatory experiments upon the Pic du Midi.

Egger, in closing, said that the one important factor in the causation of these changes is the diminished oxygen-pressure, and that the crucial experiment was made by Regnard, when he proved that when barometric pressure was decreased the blood's power of absorption of oxygen was increased.

At the same congress Drs. Koeppe and Wolf also reported upon the blood-changes produced by altitude. Their experiments were made between Leipzig, near sea-level, and Reiboldsgrün, elevation 2200 feet. They found by experiments upon healthy and sick persons, and especially among the latter, upon transference from the low to the high ground, a marked increase in the number of red corpuscles, a marked reduction of hemoglobin, a striking behavior in the proportion of blood-plates and a unique appearance of them; these changes remaining constant after the eighth or ninth day. By comparison with other observers at different altitudes, it was found that the number of corpuscles increased with the altitude; that the new corpuscles were smaller in size than the old, and not as rich in hemoglobin. These facts seemed to confirm the belief that altitude increases tissue-change and is therefore of special value to consumptives.

Egger found that during the first twelve days of residence on high ground, while the corpuscles increased 19.72 per cent., the hemoglobin increased only 7.23 per cent. But in the next twenty-four days, while the corpuscles increased only four per cent. more, the hemoglobin was increased eight per cent. As Koeppe's cases were only observed an average of fourteen days, while Egger's were observed for an average of thirty-six days, the evident error of Koeppe in stating that the hemoglobin was not increased is partially explained. His observations were not as elaborate or as precise as those of Egger, and with respect to the increase of hemoglobin are opposed to all other observers and conflict with reasonable deduction.

We see, then, that the following facts are established, namely: that the peculiar effects of high climates are, to increase the amount of red corpuscles and hemoglobin in the blood, as well as its power of oxygen-absorption; to increase the chest-expansion—a fact

which is admitted by all observers, who also have remarked frequently upon the almost emphysematous character of the breathing, especially at the apices of the lungs, of the native-born children and old residents.

With regard to the assumed enlargement of the heart cavities and muscle, no sufficiently precise or extensive experiments have been as yet made to prove what logical deduction and common belief endorse, viz., physiological cardiac hypertrophy. The remarkable power of horses raised in high climates to endure prolonged fatigue and great speed, both in their native uplands and also when transferred to the sea-level, is a matter of common observation and belief. In men the superior endurance of mountaineers is also well known. This has been noted especially by Hirsch in accounting for the endurance of the natives resident in the high Andes. Further, the results of the treatment of heart disease by the strengthening effect of climbing and high climates, as recommended by Oertel, tend to confirm the belief that the heart is increased both in strength and capacity by altitude.

We have, then, as the special physiological effects of altitude, acting through the diminished barometic pressure, greater lung capacity, as shown by the increased chest-expansion and more forcible breath-sounds, a stronger and larger heart, and an increased ability of the blood to absorb oxygen. Therefore we have good reason to believe that there is developed a greater power of resistance to the attempted lodgment of germs within the body, by means of the increased germicidal character of the more highly oxygenated blood, and through the more perfect working of the heart and lungs. We may also assume that there is an equalizing of the circulation throughout the body, and the tendency to local stagnation—that is, to chronic congestion—is thereby lessened. On the other hand, the more vigorous circulation would, if by any accident it should be dammed up at any point, cause a more violent local inflammation and a greater general fever and disturbance. This is shown in acute pneumonia, a disease more severe on high ground than at sea-level under otherwise like conditions.

Along with these effects of altitude upon the composition and circulation of the blood and upon the respiration, certain peculiar effects upon the nervous system have been noted; but as this field has not as yet been fully worked, and does not affect the main points of the discussion, I shall pass it by for the present, merely remarking that the influence of altitude is largely modified by it.

Turning now briefly to consider how the results of observations on the effects of altitude upon disease agree with the physiological facts proved and inferred, we find that better results as a rule are obtained in high than in low climates upon all diseases where anemia or any other deficiency of the blood is the most important factor in the sickness, and also in chronic germ diseases such as tuberculosis—provided, of course, that in either case some of the accompanying conditions are not of a nature to be seriously aggravated by altitude.

So that it is true that cases of pure anemia, or those in which the anemia is the controlling factor, as in most cases of neurasthenia, and cases of pure tuberculosis or mixed tuberculosis without grave complication from catarrhal, inflammatory, or irritable nervous or cardiac conditions, are as a rule most markedly benefited by residence in a high climate, as indeed might be expected from the equalization of the circulation referred to. The tendency to hemorrhage is lessened, but when it occurs the bleeding is often more profuse. Many chronic heart affections and aneurisms are benefited; while, on the other hand, in such cases where the disease is too far advanced to admit of improvement, there is great danger in high climates.

Returning to the question of the assumed increase of the germicidal power of the blood: though the physiologists have not as yet proved it by experiments, as they probably will when they have time to devote to the subject, certain clinical observations strengthen a belief in its existence. As an instance, such fevers as typhoid, scarlet fever, measles, etc., occurring in high climates, are much more frequently of a mild type than corresponding cases in low climates—often, indeed, so slight in symptoms as to pass unrecognized, showing doubtless that the germs are scanty and well resisted. Alongside of these mild cases, however, every now and again are seen some of the most severe types—apparently indicating that when the attack has come from an unusual quantity of germs, even the specially strong germicidal power of the blood is overthrown, and the disease progresses uncontrolled. This at least occurs in the outset, though if death does not ensue the increased power of resistance returns and the convalescence is more rapid and complete than it

probably would have been at sea-level. This increased germicidal quality of the blood is shown, I believe, in many ways; for instance, the comparative difficulty in making successful vaccinations in high climates, and the rarity of hydrophobia, are probably additional proofs.

Before closing I will briefly refer to the effect produced by some of the elements of elevated climates, other than diminished barometric pressure, which they share in common with certain of the low climates. While there may, or may not, be more or less precipitation, there is almost invariably drier air, as shown by less humidity both relative and absolute, and usually a dry, well drained soil. The quality of dryness lessens the effect of temperature upon the body by producing more evaporation from the skin and lungs, and consequently affections like sunstrokes are rare. In nervous disorders, while neuralgia with anemia is not common, the various myalgias and dry pleurisies are frequent; also inflammatory and irritable conditions, and disturbances of nervous equilibrium, are not rare. As might be expected, the dryness improves the action of the skin, mucous membranes, bowels, liver, etc., in one class of individuals, while it disturbs it in another. The dry air further increases the nerve-tension of the individual and also the electric phenomena of the atmosphere.

In summer, warm, dry air, by provoking evaporation lessens the injurious effect of heat upon the body; in cold weather, on the other hand, cold dry air being a non-conductor, the cold, while it chills the surface, does not penetrate to the interior of the body.

Dry air, again, interposing but little vapor between the body and the sun, allows the latter to shine with greater heat and light than in most low climates, and therefore the vivifying effects upon animal life are strongly exhibited; while the air itself, being usually cold in the shade and at night, there being but little vapor in it to retain the heat, mitigates the injurious influence of over-heat.

The increased sunlight and sun-heat, with the increased electric tension, and consequent increased ozone, insure a normally pure air, and a more ready destruction of germs when they are conveyed into it from the bodies of sick persons or animals, or from garbage or filth; so that it is found that the tubercle bacilli in sputum are more quickly destroyed and infection more rarely follows even when the conditions are otherwise favorable for its occurrence. On the other hand, out of the body as in it, if for some reason the number of germs is excessive, the barriers put up by altitude are swept away, and infection will be as sure and fatal as in low countries; so that while it is reasonable to believe from the facts and logical assumptions that at a high altitude both the body and the air are better protected against injurious germs, and that these germs are feebler and less abundant, yet when the safety line is once passed the pestilence will walk and the body wither as surely on the mountain as on the plain. Thus, while the mountaineer may trifle longer with the laws of health and sanitation than the plainsman, yet if he does not mend his ways the day of reckoning will surely come.

In climates high or low the laws of health must be obeyed. To preserve the body in a state of resistance, and to keep the house sanitary, both must be clean, and pure air and sunshine be supplied to them; with this accomplished, no other germicides are needed, nor will infection be rife. Apropos of ventilation and sunlight as against disinfection, this story of the coarse but brilliant Abernethy may be quoted: On being asked what he thought of disinfectants, which in his day were of the loud-smelling order, he replied: "They are a good thing, a damned good thing, because they kick up such an infernal stink that you have to open the windows."

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*THE AFTER-TREATMENT OF NORMAL CATARACT EXTRACTION.**

By Casey A. Wood, M.D.,
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Although one commonly thinks of cataract as an opacity of the crystalline occurring in an eye otherwise normal, it is nevertheless incorrect to regard the ocular structures surrounding the diseased lens as being themselves unaffected. A cataractous eye is not an *oculus sanus in orbita sana.*

There is a sense, however, in which the healing process pursued by the wounds involved in the extraction of cataract may be described as normal. At any rate the subsequent course followed by the process of repair, the visual results, and the ultimate fate of the eye, are usually determined at the time of the operation. Fortunately the cases in which the final result is in every sense of the word

*A lecture delivered at the Post-Graduate Medical School, Chicago.

chamber has re-formed, just as soon as it is again refilled. If applied at all, I am much in favor of employing these remedies in the form of ointment, smeared on the lids or on the dressing. Not only is a drug applied in this shape more uniform in its action, but it is decidedly more persistent than when exhibited in solution. Moreover, one also obtains the soothing effects of the greasy application to the lid-edges, preventing their adhesion if much mucus is formed beneath the dressing, and allowing a ready escape for tears and other discharges.

We now come to the question of the dressings themselves. And first of all, shall we apply them to one or both eyes? Personally, I have never been able to see any reason for covering the sound eye after a normal cataract extraction. It has a very depressing effect upon most patients, it does not prevent them from moving the eye underneath the bandage, and it does not in any way assist the healing process in the eye operated upon.

As to the form of the dressing, there is about the same difference of opinion to-day that existed in the time of Von Graefe and Beer; one school cries out for heavy bandages and absolute rest, the other for liberty and no dressing. One extremist applies to both ocular regions a thick flannel or gauze bandage over pads of borated or even iodoform cotton (Fig. 5), while the enthusiast of the protestant creed advocates a narrow strip of isinglass or other plaster (Fig. 6), just large enough to keep the lids together. Doubtless each one of us considers his method to be the best, but even a superficial study of the course pursued by the healing process after cataract-extraction will show that the great majority of cases do well with any kind of bandages or with none at all, and I am therefore inclined to the one that gives most comfort to the patient. I do not think we should arbitrarily use any form of dressing in *all* cases. I usually prefer the following (Fig. 7): A layer of borated or sterilized cotton, two or three millimeters in thickness, is applied to the surface of two single layers of sterilized gauze. These are together cut out (so that they adhere and form one piece) with a pair of scissors, in oval form and of a size to cover the orbital openings, reaching from the eyebrows to below the inferior orbital margin. Three pieces of adhesive plaster, each three or four inches long, keep this dressing in place and are so arranged that no portion of them presses upon the eyeball. This is accomplished by placing the first over the upper border of the pad, and firmly attaching both to the skin above the *superciliary ridge;* the second is carried along parallel with the nose; the third completes the triangle. Such a bandage is not too thick and heavy, permits ventilation, does not (while filtering the air passing through it) press upon the eyeball, readily absorbs mucus, and cannot without discomfort to the patient be removed by his friends, or, as the Germans would say, "*respective* enemies."

The patient should be carefully carried or wheeled from the operating-table and placed in or upon his bed. Complete rest for the next twenty-four hours is now in order. He should be warned not to talk more than is absolutely necessary, not to make any sudden movement of his body, and to refrain absolutely from blowing his nose, squeezing his lids together, turning over or getting up suddenly, and above all to abstain from sneezing or coughing. The last two acts are of course largely involuntary, but the patient should be encouraged to suppress them as much as possible.

The room should be made as comfortable as possible for the patient, especially in the matters of warmth, light, and ventilation. Either before the operation or immediately after it he ought to have a full dose of potassic bromide or be given a small quantity of morphia and atropia hypodermatically. I exhibit the former if the patient is of a costive habit, and my formula is usually this:

Potassic bromide, 2 Gm.;
Chloral hydrate, 1 Gm.;
Syrup of lactucaria, 10 Gm.;
Water, 20 Gm.

This relieves the smarting and burning that almost always follow the operation, and enables the patient to rest quietly and contentedly. It also induces sleep the first night, and puts the bowels in a quiescent condition for forty-eight hours. The diet should be semi-fluid aud easy of digestion.

What can be more provoking to the surgeon than to find, after obtaining a good operative result, that a careless nurse or a restless patient has added a newly opened corneal wound, a hernia of the iris, or loss of vitreous, to his other anxieties? A finger-thrust, a pillow-end jammed into the eye, a slight blow upon the globe, or any other of the dozen little accidents that happen to a person with imperfect vision moving about in darkened rooms, may nullify the most brilliant and correct efforts of the operator.

Especially when night comes on, or when

Fig. 7.

Fig. 8.

Fig. 9.

Fig. 10.

Fig. 4.

Fig. 5.

Fig. 6.

the patient begins to move about, the eye should be protected from injury by some sort of a shield or mask. Fuchs uses the wire-woven protector pictured in Fig. 11, and in-

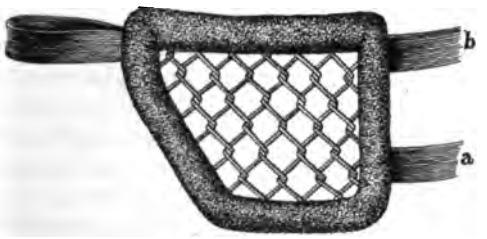


FIG. 11.

troduced as long ago as 1883. There are many modifications of this mask in the market, one of the best of which has been suggested by Würdemann. (See Fig. 4.)

Certain operators who make use of the roller bandage gain protection by starching the dressing. When this has dried, the eye will receive a considerable blow without injury.

Snellen has lately used a turtle-shaped aluminium shield (Fig. 9), about ten centimeters long and five wide, placed over the eye and held in position with strips of adhesive plaster; it forms an admirable protector. One of the best shields I am acquainted with is the *papier maché* half-mask (Fig. 10), which when carefully adjusted to the nose and surrounding parts makes a light, comfortable and effective protector.

A small proportion of patients object to wearing any sort of mask, claiming that it prevents them from sleeping and makes them nervous. In such cases I find that one may very well get along with a large, stiff and very concave eye-shade placed over the dressing and held in place with a piece of rubber plaster (Fig. 8).

I am in favor of always removing the bandage and looking at the eye twenty-four hours after the extraction. The corneal wound is now either altogether healed over, especially if a conjunctival flap has been made, or if not the danger of prolapse of the iris has generally passed. That is to say, if no iridic hernia has occurred at the end of twenty-four hours, it is not likely to occur at all from any cause, except from violent sneezing, coughing, direct traumatism, etc. In cases of uncomplicated cataract-removal the lids at the end of twenty-four hours are not discolored or edematous. From a glance at them, one can generally predict the condition of the eye beneath. The discharge on the bandage should be watery only (or contain little mucus) and ought not to be copious. The main object, however, of the inspection is to determine the position of the iris. If prolapse has occurred, *now* is the best time to deal with it.

The eye should be gently bathed with boric-acid solution, and any mucus, vaselin or ointment washed off the lids and cilia. This should be daily repeated. Solutions instilled into the eye must be neutral or slightly alkaline to test-paper, and always warmed.

When the corneal wound is healed and the anterior chamber re-established, the ordinary bandage may be dispensed with. I am in the habit of substituting for it a *concave* monocular eye-shade which, while touching the brow, cheek, and nose, is clear of the eyelashes. This is worn loosely over the eye during the day, and at night is kept in place by a small strip of adhesive plaster, as in Fig. 8. In a week or ten days one may usually dispense with any dressing or protection whatever, particularly where the patient remains indoors.

On what day should the patient be allowed out of bed? In all ordinary cases twenty-four hours is long enough for him to maintain absolute rest. Still avoiding sudden movements he may then be allowed to sit up in an arm-chair and even to move about in the room, and so gradually regain his wonted liberty. After forty-eight hours the bowels should be moved by an enema, and more solid food is to be added to the diet list.

Common sense will dictate when and under what circumstances the subject of cataract-extraction should be allowed to venture out of doors. If exercise be taken in a close carriage, he may, with the eye wearing an ordinary shade, be allowed out, even in severe weather, as early as the end of the second week; when the day is comfortably warm and there is no wind blowing, walks may be taken with impunity.

There should be absolutely no use of the eyes for a month, when glasses should be allowed for distance; when the patient is accustomed to these, lenses for near work may be prescribed.

ANTI-DIPHTHERITIC SERUM AND LOEFFLER'S SOLUTION, WITH A REPORT OF TWENTY-SIX CASES.

By Burt Russell Shurly, B.S., M.D.,
House Physician to Harper Hospital, Detroit, Mich.

It is a well recognized fact that diphtheria is the most fatal and treacherous of the contagious diseases. Within the past nine months 675 cases have been reported in this city, with

a mortality of 175, or 25.9 per cent. During the same space of time sixty-one of these cases have been under treatment at Harper Hospital, with a death-rate of eight, or 13.1 per cent. Diphtheria has a hospital mortality throughout the world of twenty to seventy-five per cent., being twenty per cent. greater than the death-rate from smallpox among the unprotected. In view of these facts, corroborated by general statistics, we are able to show a reduction in the percentage of mortality over previous hospital records, and we report in detail our methods of treatment from the time the patient is admitted until he is discharged. We shall lay aside all pathological and theoretical considerations and endeavor to demonstrate the results of clinical study and observation.

Before patients are received in the contagious wards at Harper Hospital the ambulance surgeon takes a detailed history of the symptoms. In some cases the facts cannot be elicited, through lack of sufficient observation on the part of friends or relatives, but when possible we thus obtain a continuous record of the case.

On admission the patient is isolated at once, the pulse and temperature recorded, blood-serum cultures from the exudate taken, and a thorough examination of the throat made. The clinical symptoms of the case are now noted in detail. Special observations are made and recorded on the character of the exudate, and the various so-called tests applied. The culture tubes are removed to the incubator in our own laboratory, and a culture sent to the bacteriological department of Parke, Davis & Co. for supplemental verification. The patient is now taken in charge by the head nurse; the clothes removed to the disinfecting-room; the patient wrapped in heavy blankets, and a sponge bath immediately given.

Meanwhile the regular hospital treatment is ordered, together with any additional medication the symptoms may indicate. This consists in the first place in a careful systematic dietary, for the most part of milk, together with liquid beef peptonoids, Mosquera's beef-jelly, broths, soups, gruels, egg-noggs, etc. These are alternated every two hours, according to the taste of the patient, and additions are made as may be necessary.

Along the line of therapy we have endeavored to follow the most modern methods of treatment and to combat the progressive character of the disease from the local and systemic standpoints. After eight years of careful investigation and experimental study by the hospital staff in the therapy of these cases, during which time we have run the gamut of pharmacopœial preparations, the combined hospital treatment is generally accepted by the local physicians as highly satisfactory in its results, and I cannot too strongly express my confidence in its efficacy and favorable influence. The anti-diphtheritic serum has demonstrated remarkable results, especially in cases of laryngeal stenosis requiring intubation and tracheotomy.

Medication.—In the use of anti-diphtheritic serum the neglect of local disinfectants is not justifiable, as our first indication in treatment is to prevent or limit the growth of bacteria in the throat. The regular hospital treatment includes first the application of Loeffler's Solution, manufactured by Parke, Davis & Co., according to the formula of the celebrated Dr. Loeffler. It contains:

Menthol, 10 grammes;
Toluene, q. s. ad 36 Cc.;

Then add:

Creolin, 2 Cc.;
Solution chloride of iron, 4 Cc.;
Alcohol, q. s. ad 100 Cc.

A small piece of absorbent cotton is neatly wrapped around a long wire applicator and saturated with the solution. The pledget is then firmly pressed against the exudate for ten to twenty seconds. This procedure is repeated at intervals of three or four hours, night and day. Each application is followed in twenty minutes by irrigation of the throat and nose with our mixture, containing:

Peroxide of hydrogen, 1 part;
Listerine or Euthymol, 1 part;
Dobell's Solution, or aqua calcis, 3 to 5 parts.

The thorough irrigation of the mucous membrane in this manner is of the greatest importance, affording a practical method of antiseptic treatment which limits the local development of the bacteria and secondarily the absorption of the toxalbumins, with the concomitant constitutional effects. This we have made of the first importance in connection with the treatment of this disease, and in seventy-three consecutive cases (mild epidemic) treated by these local antiseptics we had four deaths only, one case being moribund at the time of admission.

We next direct our therapy toward combating and neutralizing the absorption products of the toxalbumins. Where the disease is attended by swelling and edema of the lymphatic glands of the neck we endeavor to control the inflammation by the use of an

ice-bag or ice-collar. Strychnine, quinine and spiritus frumenti are administered in large doses to meet the indications of constitutional disturbance.

On admission to the hospital all well marked or moderately severe cases are given an hypodermic injection containing 10 Cc. anti-diphtheritic serum No. 1 (1500 or 1000 immunizing units, Behring's standard), prepared in the bacteriological laboratory of Parke, Davis & Co. It is with the greatest confidence that we administer this remedy in the early stages of the disease. The skin and the hypodermic syringe being first made aseptic by the use of a five-per-cent. carbolic-acid solution, followed by sterilized water, the antitoxin is slowly injected into the subcutaneous tissue of the buttocks, back, or abdomen. Observations are made hourly on the temperature, pulse, respiration, and the character of the exudate. Cases not showing marked improvement, and those of a laryngeal type, are given a second dose of 10 Cc. six to twelve hours later. Observations are now recorded as before, and the same dose of 1000 units repeated, followed by a fourth in twelve hours, according to the indications. Every case should be treated as early as possible. We never postpone the treatment for bacteriological verification, as we believe the most valuable time is often lost in this way. The great value of the remedy seems to be manifested by using it in sufficient quantity. Our results show no deleterious effects when pushing the antitoxin to three or four, or even five inoculations, but on the other hand we find a positive limitation in the progressive character of the exudate, as well as marked decrease in the amount of systemic infection.

With this general outline of treatment as carried out in Harper Hospital, I present a report of twenty-six cases there treated, showing results and conclusions which I trust will aid in the demonstration of the power and specific influence of serum treatment in cases of diphtheria:

CASE I.—L. L., female, age seventeen years; admitted to Harper Hospital at 5 P.M. March 29; temperature 101.2°, pulse 92. Had been complaining of malaise, headache, fever, dysphagia, and anorexia, for twenty-four hours. On examination, tonsils, pillars of the fauces, uvula, and posterior wall of the pharynx, were found covered with a thick, grayish exudate, only a small passage remaining between the right tonsil and uvula; neck swollen; cervical glands greatly enlarged, especially on the left side; fetid odor to breath: Klebs-Loeffler bacillus present.

Irrigations of hydrogen peroxide and Euthymol, equal parts, followed by topical treatment with Loeffler's Solution; one-half hour later the throat was irrigated with Seiler's Solution. This was repeated every two hours. Ice-collar ordered to neck, and milk diet every two hours.

One hour after admission, and forty-eight hours after the disease had developed, temperature being 101.2° and pulse 90, 12 Cc. of anti-diphtheritic serum (1000 immunizing units) were injected hypodermically in the dorsal region of the back. Two hours later, temperature was 101.2°; at 12 midnight, 100.2°; at 4 A.M., 100°; at 8 A.M., 99.2°—a fall of two degrees in fourteen hours.

At 2 P.M., temperature being 99.4°, a second injection of 12 Cc. serum was made in the back, with the following temperature reaction: Two hours later, 99.6°; four hours, 100.4°; eight hours, 100°; twelve hours, 100.2°.

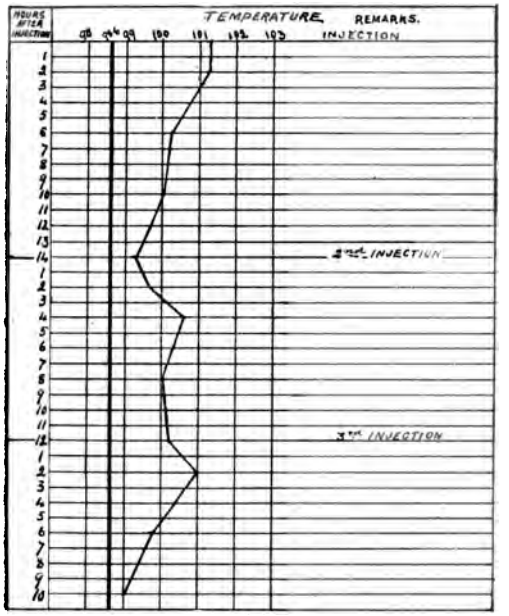
Ninety-two hours after exudate was first discovered and twenty-four hours after second injection, temperature being 100°, 2.5 Cc. of serum were given hypodermically, between the shoulders; two hours later, 4 P.M., temperature was 100°; at 8 P.M., 101°; at 12 midnight, 99.8°.

During the first thirty-six hours, patient showed marked constitutional effects from the rapid absorption of the toxalbumins; vomiting, marked prostration, languor, restlessness and mild delirium developed. It was necessary to give nourishment through a catheter passed back into the lower pharynx. Twenty hours after first injection of serum a large piece of membrane was detached, when deglutition became less difficult. Thirty hours after first injection and ten hours after the second, hyperemia was considerably subdued; six ounces of milk taken without the tube.

March 31, thirty-six hours after first injection, bright red rash observed on buttocks and calves of legs, continuing for twelve days. Swelling much reduced, deglutition much less painful; large patches of membrane detached during the morning. Third injection, of 70 minims, given at 2 P.M.; at 8 P.M. more difficulty in swallowing was noticed; slept well.

During the next four days, patient improved rapidly; patch of membrane reduced in size; April 3, had paralysis of the palate, slight regurgitation. On the tenth day the pulse dropped from 72 to 54; felt weak, with pain

about heart. April 9, membrane nearly disappeared, pulse 70. April 11, articulation better, no regurgitation. April 12, rash disappeared, throat clear. Discharged two weeks later, with slight pharyngeal paralysis.



Temperature chart of Case I.

CASE II.—C. M., age three years; admitted at 5 P. M. April 28; axillary temperature 100°, pulse 118; objective and subjective symptoms well marked; Loeffler bacillus present; exudate covering both tonsils, steadily progressing to pharynx and naso-pharynx. Had been developing about forty-eight hours; pulse very irregular and weak, showing rapid absorption.

Spray of Dobell's Solution three parts, hydrogen peroxide one part, water two parts. Loeffler's Solution applied every three hours. With temperature 100°, pulse 130, about twenty-four hours after admission, 10 Cc. of anti-diphtheritic serum were administered, with the following effect on the temperature: One hour later, 100.6°, pulse 136; two hours, 100.8°, pulse 128; three hours, 101°, pulse 128; four hours, 100.8°, pulse 120; five hours, 100.6°, pulse 116; seven hours, 99°, pulse 120; eleven hours, 99.6°, pulse 116; fifteen hours, 98.8°, pulse 104.

The condition of the throat continued to improve daily; the progressive character of the exudate was lost after two days' treatment; exudate disappeared ten days after admission; no albumin, paralysis, or rash developed. Recovery uneventful.

CASE III.—C. W., girl, age nine years; admitted 3.30 P.M. May 26; temperature 101.2°, pulse 108. Had been subject to frequent attacks of tonsillitis, which the onset of this attack simulated in every clinical feature during the first two days. The persistent and progressive character of the exudate on the second day made diagnosis doubtful, and a bacteriological examination revealed the presence of Loeffler bacilli and streptococci. On admission, two and a half days after onset, case was marked by abundance of membrane-formation over tonsils, uvula, posterior pillars, and pharyngeal wall; subjective symptoms were severe vomiting, restlessness, prostration, delirium, enlarged cervical glands, fetid breath.

Quinine sulph., 3 grains every three hours, ordered, with the regular hospital treatment; spiritus frumenti; strychnine sulph. On the fourth day of the disease 10 Cc. anti-diphtheritic serum (1500 units) were injected, temperature being 100.6°, pulse 84; four hours later, temperature 100°, pulse 84; eight hours, temperature 99.2°, pulse 72; twelve hours, temperature 99.6°, pulse 72; sixteen hours, temperature 98.8°, pulse 72. Exudate came off in pieces, and progressive character lost; throat clear eight days after admission; recovery uneventful; no albumin or paralysis. Discharged eleven days after admission.

CASE IV.—S. K., age ten years; admitted at 2 P.M. June 6, first day of the disease; temperature 100°, pulse 96. Examination on admission showed a grayish exudate on both tonsils; uvula swollen; throat hyperemic; Klebs-Loeffler bacillus present.

Regular hospital treatment was adopted. Twenty-four hours after, patient complaining of sore throat, with a temperature of 98.6°, pulse 88, 10 Cc. (1500 units) of anti-diphtheritic serum were administered, with the following effect on temperature: Three hours after, 99.4°, pulse 98; seven hours, 99.8°, pulse 84; eleven hours, 98.6°; fifteen hours, 100°, pulse 100; nineteen hours, 99.6°, pulse 94. Sixteen hours later temperature reached normal, where it remained during convalescence. Membrane improved gradually every day, a few shreds remaining on the fourth day; throat clear on the seventh day. Slight epistaxis during convalescence. Albuminuria developed five days after admission; no paralysis.

CASE V.—G. A., girl, age three years; admitted July 30; temperature 98.6°, pulse 108. Usual symptoms of invasion began about thirty-six hours prior to admission. Exami-

nation of throat revealed both tonsils swollen, spotted with exudate.

Patient was ordered the regular hospital treatment, but after twenty-four hours temperature increased to 102°, pulse 126. At first the exudate seemed to respond nicely to three-hour applications of Loeffler's Solution and the usual irrigations, but with a rise of temperature it seemed to spread with redoubled vigor, and persisted in spite of the most thorough use of local disinfectants: patient was suffering from rapid infection. Three days after admission, with membrane involving tonsils, uvula, and pharynx, temperature 99°, pulse 120, 10 Cc. of anti-diphtheritic serum were injected; three hours later temperature was 99.6°, pulse 120; after seven hours it was 99.2°, pulse 122; eleven hours, 99.6°, pulse 122; fifteen hours, 99.4, pulse 120.

The progressive character of the membrane changed within twenty-four hours. The persistence of the exudate was demonstrated by the extent of time consumed in gradual exfoliation—twelve days after admission we found the tonsils and uvula still swollen and dotted with exudate. It was not until seventeen days after admission that the tonsils were finally clear. Patient was discharged twenty-seven days after admission; no paralysis, rash, cardiac symptoms, or albuminuria developed up to the time of discharge.

Case VI.—L. G., age seven years; admitted at 2.20 P.M. August 18; temperature 100.4°, pulse 82. Symptoms of invasion developed four days prior to entrance; sore throat first appeared about thirty-eight hours before admission. Bacteriological examination made before and after admission confirmed clinical signs; objective symptoms were dysphagia, right tonsil covered with grayish exudate the size of a ten-cent piece, both tonsils hyperemic, bleeding surface remaining after removal of membrane.

Thirty hours after exudate was discovered, 10 Cc. anti-diphtheritic serum (1000 antitoxic units) were administered, with the following temperature observations: One hour later, 101°; two hours, 101.4°; three hours, 101°; four hours, 101°. Six and a half hours after injection, temperature dropped 2½ degrees to normal, from which it never varied over one degree during the subsequent course of the disease. The patch of pseudo-membrane loosened twelve hours after administering the serum, and in twenty-four hours exfoliation had progressed so rapidly that it was only one-fourth its former size; thirty-six hours afterwards the boy was feeling well, no dysphagia. The only local treatment in this case was irrigation with Euthymol one part, peroxide one part, Dobell's Solution three parts, every three hours. The disease was unattended by rash or albuminuria. Discharged fourteen days after admission.

Case VII.—W. B., boy, age 2½ years; admitted at 11.30 P.M. August 31, four and a half days after onset of attack; temperature 99°, pulse 126; condition exceedingly grave. Tonsils, uvula, soft palate, pillars of the fauces, and pharynx, edematous and covered with a grayish exudate.

Applications of Loeffler's Solution were ordered every two hours; irrigations of peroxide, Euthymol, and Dobell's Solution. Effects of the systemic infection very marked; drowsiness; prostration rapidly increasing. At 12.30 A.M., temperature being 100°, pulse 124, 10 Cc. anti-diphtheritic serum were injected, with the following temperature observations: One hour later, 100°, pulse 108; two hours, 100°, pulse 98; three hours, 98.6°, pulse 100; seven hours, 98.6°, pulse 100; eleven hours, 98°, pulse 116; fifteen hours, 98.6°. The pulse became irregular and weaker; patient very restless and delirious; no improvement in the condition of the exudate was perceptible; breathing improved slightly; no rash. Patient died twenty-six hours after admission.

Case VIII.—B. G., age nine years; admitted at 3 P.M. August 31; temperature 99.6°; pulse 104. Usual symptoms of invasion had developed about thirty-one hours before admission. Loeffler bacillus present. Diphtheritic membrane was observed on the right tonsil only, with marked hyperemia of the left tonsil and uvula.

With a temperature of 99.8°, pulse 94, 10 Cc. anti-diphtheritic serum were administered, and irrigations of Euthymol, hydrogen peroxide, and Dobell's Solution, ordered every two hours. The following temperature observations were made: Three hours later, 99.8°, pulse 94; six hours, 99.6°, pulse 86; twelve hours, 99°, pulse 82; sixteen hours, 99.6°, pulse 92; twenty hours, 99°, pulse 104; twenty-four hours, 101.8°, pulse 118; twenty-eight hours, 103°, pulse 108. Exudate forming on left tonsil; exfoliation from right. Loeffler's Solution begun; temperature dropped steadily to normal during the next twenty-four hours, from which it did not vary a degree during convalescence, a fall of 4½ degrees; the membrane disappearing entirely from the right tonsil and being much reduced in size

on the left. Patient had two attacks of epistaxis on the third day. Eight days after admission, throat entirely clear; no albuminuria, paralysis, or rash.

CASE IX.—H. B., girl, age seven years; admitted at 7 P. M. Sept. 9; temperature 103.4°, pulse 122. The usual symptoms of invasion had developed suddenly since morning. Throat was found inflamed and edematous; tonsils and uvula covered with a thick, tough exudate, of grayish appearance; neck swollen; cervical glands enlarged. Bacteriological examination showed mixed infection.

The usual hospital treatment ordered; Loeffler's Solution every two hours; ice-collar to the neck. About fourteen hours after symptoms developed, 10 Cc. anti-diphtheritic serum were administered, temperature 103.4°, pulse 122. Temperature reaction was as follows: One hour later, 102.4°; two hours, 102.2°; three hours, 103.2°; four hours, 102.8°; five hours, 102.8°; eight hours, 101.8°; twelve hours, 102°; twenty-four hours, 101°. The temperature now fell, with slight intermissions, and on the third day of the disease reached normal (pulse 80)—a fall of 4½ degrees—from which it did not vary more than a degree during convalescence. Character of the exudate improved daily, lost its ragged appearance. Six days after admission the patch on the left tonsil had disappeared, and the right was much reduced in size. Loeffler's Solution and irrigations were continued at longer intervals and the patient put upon tonic treatment. Sept. 22, shreds of membrane persisting on the uvula and left tonsil. Sept. 24, throat clear. Discharged Sept. 29; no paralysis or nephritis developed up to this time.

CASE X.—E. W., boy, age ten years; admitted at 1 P.M. Sept. 18; temperature 101.4°, pulse 120. The usual symptoms of invasion — malaise, cephalalgia, diarrhea, and epigastric pains — developed on the evening of the 16th; he then ate a hearty supper and retired early; slept well, but awoke in the morning with fever, throat dry, hot and tender, anorexia; drowsy, and slept all day. Nine cases of diphtheria within three blocks of patient's residence had died recently. On examination I found throat inflamed and edematous; thick, tough, grayish exudate covering both tonsils, uvula, and pharynx, when removed leaving raw, bleeding surface; hyperemia and edema displaced the uvula backwards; submaxillary and cervical glands enlarged; breath very offensive; a sanious discharge from the nose gave evidence of nasal infection. Almost a pure culture of Klebs-Loeffler bacillus.

Patient was placed at once on regular hospital treatment; ice-collar applied to the neck; and with a temperature of 101.6°, pulse 116, thirty hours after onset, 10 Cc. anti-diphtheritic serum were injected subcutaneously into the gluteal region, with the following temperature reaction: One hour after, 101.4°, pulse 130; two hours, 101°, pulse 126; three hours, 101.4°, pulse 120; four hours, 101.8°, pulse 120; five hours, 101.4°, pulse 124; seven hours, 101°, pulse 116; eleven hours, 100°, pulse 120; fifteen hours, 98°, pulse 106. Ten cubic centimeters anti-diphtheritic serum repeated at 4.45 P.M., twenty-seven hours after first injection. One hour later, temperature 98.8°, pulse 118; two hours, 99.2°, pulse 120; three hours, 100.2°; four hours, 100.4°, pulse 118; five hours, 100.6°, pulse 120; seven hours, 99.4°, pulse 116; eleven hours, 100°, pulse 108; fifteen hours, 100.2°, pulse 108.

Examination of throat six hours after first injection showed no improvement; exudate extending over the uvula, along both palatine arches; mild delirium; eighteen hours after first injection, membrane completely covered the arches and was extending to the soft palate. Second injection twenty-seven hours after first; fourteen hours after second injection, patient very restless, membrane extending well on to the soft palate, edges ragged, exfoliation from the tonsils begun.

Third injection nineteen hours after second, temperature being 98.8°, pulse 114. Reaction: One hour after, temperature 99.8°; two hours, 100.6°; three hours, 100.6°; four hours, 101.2°; five hours, 100.6°; eight hours, 100.4°; twelve hours, 99.2°; sixteen hours, 99°; twenty hours, 98.4°.

Sept. 20, attack of epistaxis; membrane not extending. Sept. 21, twenty hours after third injection, three days after disease began, exudate breaking down, and sharp line of demarcation along border of membrane, which appeared smooth; regurgitation of food. Fourth day, very bright, asking for more to eat; given light soft diet. Fifth day, right tonsil nearly clear; pain in ears when local applications were made, relieved by douche of hot water. Sixth day, food still regurgitated through nostrils at times; patient slept well at night. Seventh day, at 8 A. M. sudden drop of temperature to 96.2°, pulse 58; hot whiskey and milk given; noon temperature 98.2°, pulse 92. Eighth day, took nourishment better; membrane very thin; patches

on the lower border of uvula, left tonsil, and left pillar. Tenth day, membrane on lower half of uvula decreasing; small patch on both tonsils and on arch. Eleventh day, persistence of exudate on lower third of uvula; right tonsil clear; small patch on left tonsil and arch. Oct. 1st, throat entirely clear, except tip of uvula. Fourteen days after admission, throat entirely clear of exudate.

Examination of urine daily showed no abnormal constituents present until eleven days after admission, when traces of albumin were detected, which continued daily without increase until date of discharge.

CASE XI. — N. R., girl, age three years; admitted at 7 P.M. Oct. 9; temperature 99.4°, pulse 112. A brother had just died of diphtheria, and a sister had been brought in ten days previously with the disease. Patient was supposed to be suffering from a cold for the last two days. On admission to the hospital all the clinical signs of the septic type were distinctly observed: great prostration, drowsiness, restlessness, continual sanious discharge from the nose; croupy cough; breathing labored; Loeffler's bacillus present. Examination of the throat showed tonsils edematous and covered with an exudate involving the naso-pharynx and larynx.

Loeffler's Solution was ordered every three hours, to be followed in half an hour by irrigations of Euthymol one part, Dobell's Solution three parts; spiritus frumenti, 3 drachms every three hours. With a temperature, per rectum, of 99.4°, pulse 134, 10 Cc. of anti-diphtheritic serum were administered hypodermically. First day patient was very restless and drowsy all day and night; breathing very difficult; cough more croupy; continual discharge from the nose. Second day, very restless; vomiting; breathing heavily; continual cough; great prostration; pulse weak and compressible, varying from 130 to 156. Patient died at 5 A.M.—temperature 101.6° —fifty-eight hours after admission.

CASE XII.—E. Q., age twenty-three years; nurse. Went on duty in the contagious wards Wednesday, Sept. 18, in perfect health; was exposed daily nursing cases of very malignant type; seemed well until the following Tuesday, six days later, when a severe attack of cephalalgia began in the morning. Previous Saturday, the 21st, had burned two fingers of the left hand, which now became inflamed, attended by great pain. Wednesday, the 25th, the lymphatics were involved as far as the elbow, red lines of infection running up the anterior and posterior surfaces of the arm. In the afternoon the symptoms became more marked, headache, malaise, myosis, nausea, vomiting, coated tongue, tenderness at the angles of the jaw; throat dry, hot, and tender, and a small patch of exudate developing on the left tonsil; cervical glands enlarged. Admitted to the isolated wards of the hospital as a patient at 6.30 P.M. Sept. 25; temperature 100.2°, pulse 94. Arm was painted with tincture of iodine; poultice applied to the hand; calomel and cascara sagrada given until the bowels moved freely. Complained a good deal of sore throat; at 9 P.M. culture taken, and Klebs-Loeffler bacillus and streptococcus demonstrated ten hours later. Temperature, midnight, 102°, pulse 96; temperature 4 A.M., 101°, pulse 100; 8 A.M., 101.8°, pulse 110.

At 9.45 A.M. 10 Cc. anti-diphtheritic serum administered. Admitted to contagious wards 11 A.M. Temperature reaction after administration of antitoxin as follows: One hour later, 102.6°; two hours, 103.6°; three hours, 103.6°; six hours, 103.6°. Patient was put upon applications of Loeffler's Solution, followed by irrigations every three hours of peroxide, Euthymol, and Dobell's Solution; ice-collar to the neck, and 3 grains quinine sulph. administered every three hours. Ten hours after first injection 10 Cc. of serum was repeated hypodermically. Temperature reaction was as follows: One hour later, 102.6°; four hours, 102°; six hours, 101°; nine hours, 101.4°; twelve hours, 101.2°. With this temperature, and pulse of 100, 10 Cc. of serum were injected into the thigh for the third time. Temperature reaction as follows: One hour later, 101°; four hours, 101°; seven hours, 103.2°; eleven hours, 102.6°; fifteen hours, 101°.

Spiritus frumenti in half-ounce doses was given on the second day and continued every three hours; strychnia sulph. $\frac{1}{30}$ grain t. i. d.; quinine was pushed hypodermically and by mouth to full physiological effects.

Sept. 27, after two injections had been given, the throat was very sore; membrane extending upwards on to the soft palate and into the naso-pharynx; complained of feeling chilly; vomited beef-tea; pain in ears; slept well during the night. Sept. 28, could swallow much better; membrane showing line of demarcation, edges smooth and turning in; rested well during the night. Sept. 29, membrane drying and exfoliating; two large pieces expectorated; dry cough; slight hemorrhage from the throat; did not sleep quite so well.

Sept. 30, membrane disappearing from tonsils and soft palate, remaining somewhat on uvula. Oct. 1, small patch on left tonsil, arch, and pillar; soft palate, uvula and naso-pharynx clear; slight cough; slept well. Oct. 2, shreds of membrane on left arch and pillar smaller; had headache, nausea, and a little vomiting. Oct. 3, throat very hyperemic; fluid regurgitated through nose; pain in back; small patch on the right and left arch, adjacent to the approximate borders of the uvula; enlarged follicles on pharynx. Oct. 4, headache, and numbness in right arm. Oct. 5, appetite very much improved. Oct. 6, membrane nearly disappeared. Oct. 7, throat entirely clear.

Membrane had remained on the throat twelve days. Nine days after the disease began, a trace of albumin was discovered in the urine; this continued with varying intensity until patient was discharged. No rash. Paralysis of the palate, which later disappeared. Discharged Oct. 16.

CASE XIII.—G. H., age five years; admitted at 3 P.M. Sept. 26; temperature 99.4°, pulse 110. Had always been strong and healthy until present illness; only child; two brothers died of laryngeal diphtheria during previous week, both within four days of onset. Three days before entering hospital, his mother first noticed that he had a slight cough and complained of pain in the throat and stomach; no other symptoms; grew worse throughout the day. On the morning of the 26th the cough became croupy. When admitted to the hospital, patient had exudate on pharynx and right tonsil; croupy cough; dysphagia, which increased every hour. Cough grew more croupy. Ice-collar applied to neck; strychnia, $\frac{1}{100}$ grain t.i.d., a.c.; spiritus frumenti, 2 drachms every four hours; bichloride of mercury, $\frac{1}{80}$ grain; tinct. ferri chloridi 4 minims, quinine sulph. 2 grains, every three hours. Inhalations of steam every four hours; calomel purge; peroxide hydrogen and Euthymol equal parts, 1 ounce, Dobell's Solution 3 ounces, for irrigation every three hours. One and one-half hours after admission 10 Cc. anti-diphtheritic serum were administered hypodermically; temperature 99.4°. Temperature reaction as follows: One hour after, 99.8°; two hours, 100.2°; three hours, 102.6°; four hours, 101.6°; five hours, 101.2°; seven hours, 100°. Fourteen hours later, temperature 99°, 10 Cc. anti-diphtheritic serum were repeated, with the following temperature observations: Two hours after, 98.6°; four hours, 98.8°; eight hours, 99.2°; twelve hours, 100°; sixteen hours, 99.2°. Twenty hours later, temperature 99°, pulse 116, a third 10 Cc. of anti-diphtheritic serum was injected. Two hours later, temperature 100.4°; six hours, 101.8°; ten hours, 102.4°; fourteen hours, 101.2°; eighteen hours, 101°; twenty-two hours, 100.4°.

Temperature averaged 99°, pulse 100, during the remaining course of the disease. The daily report is as follows: Sept. 27, coughed during the night a good deal; slept between medications; breathing very difficult, gasping for breath; intubated by Dr. W. S. Anderson, with great relief; nutritive enema given of peptonized milk, liquid peptonoids, and spiritus frumenti; breathing became gradually worse, and patient coughed up the tube at 11 P.M.; larger tube inserted by Dr. Anderson at 2.30 A.M.; no relief; breathing became very difficult and labored; exceedingly bad at 6 A.M., when, assisted by Dr. Anderson, I performed tracheotomy, the high operation, with immediate relief; color returned, breathing became slow and natural; patient slept all day and retained nourishment. Sept. 28, digitalin $\frac{1}{100}$ grain every four hours given for four doses; exudate extending on to wound; dressed with aristol. Sept. 29, great quantity of mucus expectorated through the tube; breathing labored, and cough croupy; peptone present in urine; infusion digitalis, one drachm every four hours. Sept. 30, albumin present in considerable quantity; amount of urine diminished to 11 ounces in twenty-four hours; membrane breaking down; had choking spell and expectorated large quantity of membrane; cough slight, rasping in character. Oct. 1, breathing slightly croupy in character; attack of epistaxis; discharge from the tube greatly lessened. Tube removed for the first time on the 4th, patient breathing well through the mouth and nose; removed permanently on the 6th. Patient discharged on the 18th, twenty-three days after admission, albuminuria having persisted for six days; no paralysis or rash.

CASE XIV.—A. R., girl, aged fifteen years; admitted Sept. 30, at 7.30 P.M. Brother and sister died a few days later with the same disease. Fourth day of illness patient was very weak; fainted repeatedly; had headache and diarrhea; on the following day sore throat, chills, fever, anorexia and dysphagia developed; speech thick, and difficulty in breathing. Temperature on admission, 99.8°, pulse 98.

The routine hospital treatment, Loeffler's Solution, irrigations, ice-collar to the neck,

were ordered, and with a temperature of 99.2°, pulse 96, this being the third day of sore throat, 10 Cc. anti-diphtheritic serum were injected into the thigh. Temperature was recorded every hour, but did not vary four-tenths of a degree for next six hours. Examination of throat on admission showed right tonsil covered with exudate; patch on right arch, including upper right border of uvula; small patch on upper surface of left tonsil; pharynx clear. Improved rapidly; throat clear seven days after admission. Albuminuria developed suddenly and with great severity on the third day after admission, and continued with varying intensity until discharge, seventeen days after admission.

CASE XV.—R. S., boy, age seven years, admitted at 4 P. M. Oct. 13; temperature 102°, pulse 130. Had been sick for two days; exudate appeared about twenty-four hours before admission; all the symptoms of the insidious type present. Examination showed both tonsils involved, more extensive exudation on the right; uvula and soft palate congested; glands enlarged; patient drowsy most of the time.

Regular hospital treatment instituted; also quinine sulph. prescribed in doses of 3 grains every three hours. Twelve hours after admission, temperature was 100.4°, pulse 130; membrane extending, covering both tonsils completely, spreading to the uvula. Four hours afterwards, chill; rectal temperature showed 103.6°. Sixty hours after appearance of exudate, temperature 102.2°, pulse 120, 10 Cc. (1000 antitoxic units) of anti-diphtheritic serum were injected, with the following temperature reaction: One hour later, 101°; two hours, 101.2°; three hours, 101°; four hours, 100.6°; five hours, 101°; eight hours, 99.6°; twenty-four hours, 98.8°. At midnight breathing became quite difficult, but patient rested well during the morning. Oct. 15, twenty-four hours after injection, patient felt very much better and seemed brighter, had almost no difficulty in breathing, and complained of no pain; sanious discharge from nose; membrane on tonsils lessening and its progressive character changed; patient slept well between medications. Oct. 16, membrane easily removed from left tonsil, more persistent on right; epistaxis; patient comfortable. Oct. 17, in the morning, large piece of membrane exfoliated; only a few points remaining on tonsils; small patch on pillar; patient seems very bright; appetite good. Five days after admission, throat entirely clear; convalescence uneventful; no rash, cardiac symptoms, paralysis, or nephritis.

CASE XVI.—M. G., girl, age 1½ years; admitted at 4.30 P.M. Oct. 2, on the third day of illness; rectal temperature 100.8°, pulse 126. A sister had just died at home of the disease. On inspection we found both tonsils and pillars of the fauces covered with a grayish exudate; Loeffler bacillus demonstrated; tonsils so greatly swollen it was not possible to see the pharynx; ordinary subjective phenomena present.

Ten cubic centimeters anti-diphtheritic serum were injected, with the following temperature reaction: One hour later, 101°; two hours, 101.2°; three hours, 99.6°; five hours, 100.2°; seven hours, 100.6°; eleven hours, 98.8°; fifteen hours, 100.8°. During the next sixteen hours the temperature dropped to normal; it did not afterwards rise more than one degree, except when gastro-intestinal trouble developed late in convalescence. Patient was given regular hospital treatment. Oct. 3, twenty-four hours after antitoxin treatment, restlessness and fretfulness noted; breathing more labored; membrane very persistent. Oct. 4, patient drowsy, refused all nourishment, but breathed more easily. Oct. 5, nourishment taken much better; patient rested well. Oct. 6, urticarial rash on cheeks in the morning; stomach greatly disturbed; nourishment given by nutritive enemata, liquid peptonoids, milk and whiskey three times a day. Convalescence slow but uneventful; discharged Oct. 26; returned twice for treatment, having developed acute bronchitis. Rash appeared four days after antitoxin was given, but quickly subsided. Gastric disturbance in this case was very well marked during the entire course of the disease, and was sufficient to cause the skin lesions; no cardiac symptoms, paralysis, or nephritis.

CASE XVII.—J. P., boy, age three years, admitted at 8 P.M. Oct. 20, with the usual symptoms of a well marked case. Sore throat had developed about three days before; both tonsils were covered with a grayish exudate; glands of the neck enlarged; posterior nares and nose involved; culture showed mixed infection.

The usual hospital treatment, calomel purge, irrigations, and Loeffler's Solution, were ordered; patient was exceedingly restless and fretful. With temperature of 99.2°, pulse 120, 10 Cc. anti-diphtheritic serum (1000 antitoxic units) were injected. One hour later, temperature 100°; two hours,

98.2°; three hours, 99.4°; four hours, 98.8°; nine hours, 100.8°; thirteen hours, 100.4°. Fourteen hours after first injection, 10 Cc. repeated, temperature being 100.2°, pulse 130; one hour later, temperature 99.8°; two hours, 99.6°; four hours, 99°; six hours, 100.2°; ten hours, 99.6°; fourteen hours, 99°.

The exudate showed marked improvement and lost its progressive character from the first. Three days after first injection throat was entirely clear; patient could breathe through the nose without much difficulty; a discharge still continued, however, for the subsequent five days. On the sixth day there was slight recurrence of membrane on the right tonsil, which cleared rapidly. The ninth day after the first injection, urticaria developed on the face, neck, and back; patient was restless and fretful; this disappeared within two days. Albuminuria developed on the fourth day after the first injection of the serum, but rapidly disappeared. Patient was discharged Nov. 5, fifteen days after admission, and was in good physical condition when seen two weeks later; no paralysis or other sequelæ had developed, and patient seemed perfectly well.

CASE XVIII.—Paul P., age twenty-one months; brother of last case; admitted Oct. 20, 8 P.M.; temperature 99.6°, pulse 132. Diphtheria of the laryngeal type. An elder brother had just died of the disease. Case exhibited marked symptoms of dyspnea—suppression of voice, recession of chest-wall, restlessness; the breathing was becoming rapidly more labored; with each respiration there was retraction in a marked degree of all the tissues of the chest and epigastrium.

With temperature 99.6°, 10 Cc. anti-diphtheritic serum (1000 units) were administered, and tracheotomy, the high operation, performed by Dr. Barrett; relief was instantaneous; the labored breathing subsided to a slow, normal respiration; patient slept throughout the entire night, except when awakened for medications; spiritus frumenti, 20 minims, given hypodermically every two hours; steam atomizer containing one drachm sodium bicarb. to one pint water sprayed continuously over tracheotomy tube; the membrane loosened, and pieces were expectorated from time to time. Temperature reaction after administration of antitoxin was as follows: Two hours later, 100.4°; three hours, 100.2°; four hours, 99.8°; five hours, 100°; six hours, 99.8°; ten hours, 100.2°. A second injection of 10 Cc. was given seventeen hours after first injection, temperature being 101.2°, pulse 130. This was followed in three hours by 5 Cc., and two hours later by 5 Cc. During this time the temperature range was as follows: Two hours after, 100°; three hours, 101.2° (5 Cc.); four hours, 101°; five hours, 100.4° (5 Cc.); six hours, 100°; eight hours, 99.8°; ten hours, 100°; fourteen hours, 99.8°; nineteen hours, 101° (5 Cc.); twenty-one hours, 101°; twenty-four hours, 101.2°; thirty-one hours, 100.6° (5 Cc.); thirty-two hours, 100.6°; thirty-five hours, 100.2°. Oct. 21, had severe choking spell; twenty-four hours after operation, tube was removed, cleaned, and replaced; this became again necessary eight hours later, relieving the breathing considerably. Oct. 22, had several spells of difficult breathing, when the entire tube was removed; expectorated large pieces of membrane. Oct. 23, tube removed twice, followed by fluid discharge. Oct. 25, much brighter, appetite very much improved. Oct. 26, six days after first dose of antitoxin, urticaria developed on face, back, and abdomen; wheals very numerous in the early morning, almost disappearing in the afternoon. Oct. 29, patient again breathed through mouth and nose; discharge less tenacious. Oct. 30, tube permanently removed. Nov. 7, recurrence of membrane on left tonsil, and difficult breathing with croupy cough developed. Temperature being 99.4°, pulse 128, 10 Cc. antitoxin was given at 7.15 P.M., with the following effect: One hour after, temperature 98.4°; two hours, 98°; three hours, 98.4°; five hours, 99.2°; thirteen hours, 99.4°. Patient rapidly convalesced until Nov. 18, when temperature rose to 103° and breathing became labored; fell to 100 at 8 A.M., but rose at 4 P.M. to 103.4°; under the exhibition of phenacetin, one grain every hour, it dropped to 99°. Patient discharged on the 21st; no paralysis; no albumin.

CASE XIX.—J. H., girl, age fourteen years; admitted Oct. 25, 10 A.M.; temperature 99.2°, pulse 100. Was taken sick seven days before; showed usual symptoms of invasion; no pain except in throat; tonsils and uvula covered with exudate when seen by Dr. Meade, Monday before admission; pharynx and naso-pharynx involved next day, patient growing steadily worse. On admission, tonsils, uvula, pharynx and naso-pharynx completely covered with exudate; almost no constitutional symptoms of absorption. It was not thought advisable to give antitoxin, as this was the seventh day of the disease. Patient was put upon Loeffler's Solution and irrigations of peroxide, Euthymol and Dobell's

Solution every three hours, but exudate remained persistent in spite of all local disinfectants; membrane spread rapidly through the nose down into the larynx, involving the pharynx more extensively, and becoming much thicker than when treatment was begun; constitutional symptoms of toxemia were becoming more marked every hour, as was also the difficulty in breathing. It became a question as to whether laryngeal stenosis or systemic infection would be the cause of death.

At this juncture, eleven days after the first symptoms of invasion, 10 Cc. antitoxin were given, with a temperature of 102.4°, pulse 112. One hour later, temperature was 101.2°; two hours, 101°; three hours, 100.4°; four hours, 99.8°; five hours, 100.2°; six hours, 98.4°—a fall of exactly four degrees in six hours. The breathing, however, became more labored, and symptoms of cyanosis developed rapidly; the patient could not speak and was exceedingly restless. At 9 A.M., nine hours after the first dose, 5 Cc. antitoxin were injected, temperature being 99.8°, pulse 110. Tracheotomy, the high operation, was now performed by Dr. Barrett, with immediate relief, and the symptoms of obstructive dyspnea quickly subsided. Directly after the operation the remainder of the vial of antitoxin, 5 Cc., was administered, temperature 99.6°, pulse 110. Two hours later, temperature was 99.8°; three hours, 101°; five hours, 100.4°; six hours, 102.8°; seven hours, 102.2°. Again 10 Cc. of antitoxin were given, and one hour later the temperature was 101.8°; three hours, 101.2°; four hours, 100.4°; five hours, 101.2°; seven hours, 100.2°. One hour after this inoculation, twenty-two hours after first injection, 30 Cc. having been given, the patient expectorated a large piece of membrane, one-half the size of the tube, and two hours later another piece of the same size.

During thirty-six hours subsequent to the third injection and tracheotomy the following phenomena were recorded: Expectorated six large pieces of membrane, one being cylindrical, size of the tube, one-half inch in length; discharge from the nose lessened; tonsils clear; only traces of membrane remaining in the pharynx and uvula—which disappeared entirely three days later; there was a continuous fall in pulse and temperature; during the critical period after the operation the heart was supported by active stimulation; tube was removed for a short time on the sixth day and permanently on the thirteenth day; the wound granulated rapidly, and convalescence was uninterrupted, though attended by a slight laryngeal cough; rash appeared on the sixth day after the first injection, but quickly disappeared; examination of urine on admission showed trace of albumin, but this disappeared before antitoxin was given, and daily examination gave no evidence of its return; patient had no paralysis or other sequelæ; was discharged Nov. 19, twenty-five days after admission.

CASE XX.—W. H., boy, age six years; admitted Oct. 29, 11 P.M.; temperature 100°, pulse 136. Was taken ill the previous day; had every symptom of membranous croup; examination of throat and nose showed no exudate present; symptoms entirely laryngeal; breathing very much labored; Klebs-Loeffler bacillus present.

Condition of patient throughout the night showed every indication of a rapidly progressing laryngeal stenosis. Ipecac was given every fifteen minutes until nausea supervened; mustard foot-baths, mustard stupes to the chest, ice-collar, and intubation; but with no relief—patient was becoming cyanotic and the breathing grew rapidly worse. Tracheotomy, the high operation, was performed by the house surgeon, Dr. Barrett; the dissection was made slowly, very little hemorrhage was encountered, and the result was immediate relief of dyspnea, together with the discharge of a great quantity of mucus and pseudo-membrane; patient breathed quietly and was very comfortable all day. Temperature being 101.4°, pulse 130, 10 Cc. (1000 units) anti-diphtheritic serum were administered at 12.15 P.M., four hours after tracheotomy. The following effect on the temperature was observed: One hour later, 100.6°; two hours, 100.4°; three hours, 101.2°; five hours, 101.6°; eight hours, 101°; twelve hours, 100°; sixteen hours, 100°. Patient improved very slowly; twenty-one hours after first inoculation, 6 Cc. of serum were injected, temperature being 99.8°; pulse and temperature were taken every hour, showing a reaction of only four-tenths of a degree. At midnight the serum was repeated, nine hours after the second dose, temperature being 100.2°; subsequent record for five hours shows rise and fall of four-tenths of a degree. Tracheotomy tube removed permanently eighteen days after operation; wound granulated slowly; convalescence was prolonged. Severe laryngeal and bronchial cough.

Patient was weak and emaciated when admitted; marked albuminuria developed on

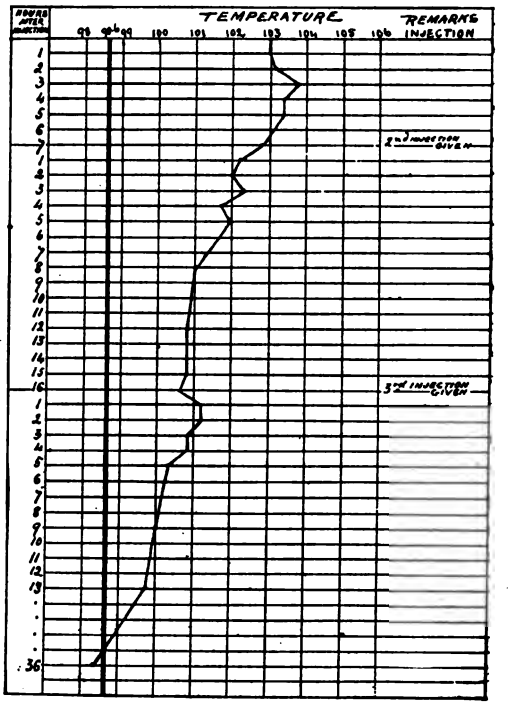
the eighth day, continuing with attendant symptoms for eleven days; reaction normal on discharge. An active supportive and tonic treatment was carried out throughout the entire course of the disease; patient discharged six weeks after admission.

CASE XXI.—E. R., age twenty-one years; admitted Oct. 29, at 4 P.M.; temperature 100°, pulse 96. Had sore throat and symptoms of invasion during the past twenty-four hours. Examination of throat showed tonsils spotted with exudate, also right side of pharynx.

The regular hospital treatment was ordered, and with a temperature of 98.5°, pulse 84, 10 Cc. anti-diphtheritic serum (1000 units) were given; hourly temperature showed a variation of less than one degree; patient improved rapidly; convalescence uneventful; urticaria attended by intense itching appeared thirteen days after inoculation. Discharged twelve days after admission.

CASE XXII.—F. S., boy, age eight years; admitted Dec. 8, 4 P.M; axillary temperature 103.1°, pulse 108; second day of the disease. Eight children in the family had diphtheria within the last twenty-four days, two having died. Patient had headache, vomiting, anorexia, delirium, and great prostration; lay in a stupor, from which we could scarcely rouse him; breathing obstructed, muscles twitching, glands swollen and edematous; remained in stupor throughout the night; did not know he had been brought to the hospital. Exudate covered both tonsils, adjacent walls of the uvula, left side of the pharynx and naso-pharynx; fetid breath; Loeffler's bacilli and streptococci present.

Ten cubic centimeters (1000 units) anti-diphtheritic serum were injected one hour after admission, followed by a second dose six and a half hours later, and a third dose twenty hours after the second. Regular hospital treatment also. Ten hours after second inoculation, exudate had extended over soft palate and arches; general condition very much better; less pain on swallowing; much brighter. Twenty-four hours later herpes developed on cheeks; breathing much improved; membrane one inch square covering soft palate became loosened and was removed by the forceps; patient bright and talkative. Dec. 11, exudate entirely disappeared from left tonsil, uvula, and naso-pharynx: small patch on right tonsil. Dec. 12, membrane in shreds on right tonsil, palate, and anterior pillar. Dec. 13, point of exudate on anterior pillar; remainder of throat clear. Dec. 14, five and a half days after admission, throat entirely clear; slight regurgigation of fluids; paralysis of the palate developed; voice affected; slight trace of albumin. Dec. 15, albumin disappeared. Discharged sixteen days after admission, paralysis greatly improved.

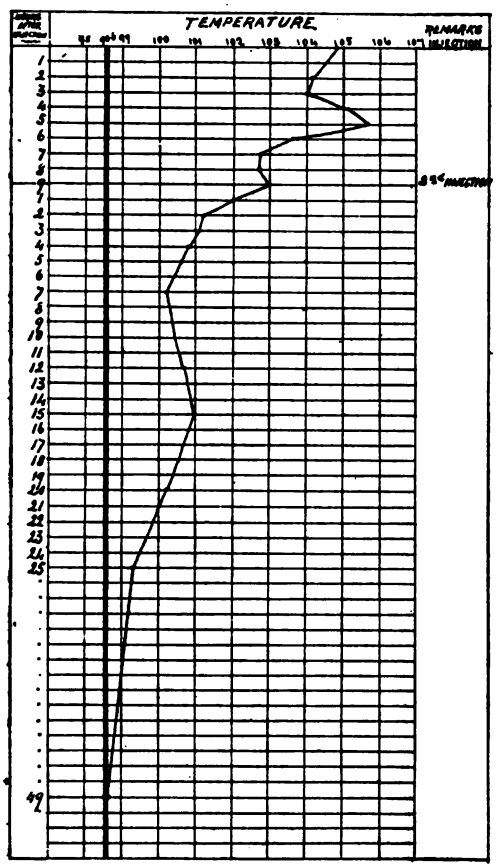


Temperature chart of Case XXII.

CASE XXIII.—B. R., girl, age nineteen years; admitted at noon Dec. 8; temperature 104.8°, pulse 128; twelve hours after onset. Had chill, dizziness, sleeplessness, dysphagia, anorexia; tonsils, uvula, soft palate, pillars, pharynx and nares covered with exudate; fetid breath; stupor and prostration; pure culture Loeffler bacilli.

Patient was given a sponge bath, followed by regular hospital treatment, together with antitoxin, 8 Cc. Six hours later, temperature lower, patient feeling much better; headache less; no backache; throat less sore. Antitoxin, 10 Cc., given eight hours after first dose. Nine hours later the following observations were made: Exudate rapidly loosening, and line of demarcation formed; two large pieces of membrane removed; temperature 100.2°, a drop of 4.6 degrees in twelve hours. Dec. 10, no extension in the last twelve hours; rapid exfoliation of membrane; membrane remaining on tonsils, pillars, arches, and soft palate; large pieces removed; slight herpes developed on left cheek. Dec. 11, pharynx clear; no discharge from nose; naso-pharynx clear; small patches on tonsil and tip of uvula. Dec. 12, pain in region of kid-

neys; membrane on left tonsil and pillars and approximate border of the uvula. Dec. 13, five days after admission, throat clear, except one small spot on left tonsil. Dec. 15, throat clear; no pain. No albumin or paralysis. Discharged Dec. 24.



Temperature chart of Case XXIII.

CASE XXIV.—J. W., boy, age seven years; admitted Dec. 10, 2 P.M.; temperature 101.7°, pulse 108; third day of the disease. Thick grayish exudate completely covering both tonsils and uvula; tissues of throat greatly swollen; no view of pharynx possible; breathing obstructed; thick discharge from nose; frequent epistaxis; Loeffler's bacillus and streptococcus present.

Ten cubic centimeters (1500 units) anti-diphtheritic serum were given, together with regular hospital treatment; temperature fell in four hours to 100.2°. Twenty hours after first dose, with temperature 102.2°, 10 Cc. (1000 units) were repeated, temperature falling to 98.2° during subsequent twenty-four hours. Condition of throat now showed great improvement daily; membrane entirely gone six days after admission. Dec. 24, discharged; no rash or paralysis.

CASE XXV.—I. M., girl, age twenty-one years; admitted 5.30 P.M. Dec. 13, on the fifth day of the disease. Felt perfectly well on the 7th, but next day the usual symptoms of invasion began; grew worse daily; twenty-four hours before admission, symptoms of laryngeal stenosis began. On admission, both tonsils, nares, pharynx, naso-pharynx, uvula and larynx were completely covered with membrane; breath fetid; breathing labored; croupy cough.

With temperature 101°, pulse 140, 10 Cc. (1000 units) anti-diphtheritic serum were administered. Temperature range: One hour later, 103°, axilla; two hours, 103.6°, rectum; four hours, 103.2°; five hours, 103°. Again 10 Cc. of serum were given, temperature being 102.3°. Two hours later, temperature 102.8°; three hours, 102.4°; four hours, 102.2°; five hours, 102.6°; nine hours, 102.2°. Serum, 10 Cc., being again repeated, the temperature fell six-tenths of a degree in the next four hours. Regular local disinfectants were used, together with inhalations of steam containing tinctura opii camphorata, tinctura benzoini composita, equal parts, one drachm, to aqua one pint. Every four hours continuous inhalations from a steam atomizer containing sodium-bicarb. solution, which together with antitoxin gave immediate relief.

Twelve hours after first dose of serum, large pieces of membrane were expectorated from the larynx and pharynx; dyspnea greatly relieved; patient's condition improved rapidly. After second dose of antitoxin, exfoliation more rapid; the extensive, progressive character of the exudate was lost. Loeffler bacillus and streptococci present. On the third night after admission, patient slept well, breathing quietly, with mouth closed. Albumin present, but disappeared Jan. 1.

CASE XXVI.—M. J., age twenty-four years; Armenian; housewife; primipara; admitted to Woman's Hospital Nov. 17, noon, in labor; general health and physical condition good; temperature 98.4°, pulse 78.

Patient was given a bichloride sponge bath, douche, and enema; forceps delivery; presentation, R. O. A., 3 P.M. Nov. 18, Dr. Jessie L. Herrick attending.

	Temperature.		Pulse.	
	A.M.	P.M.	A.M.	P.M.
First day after delivery	98.8°	100°	86	96
Second day.....	98	99	78	88
Third day	102	103.8	110	114
Fourth day	101.2	102	96	102

At noon of the fourth day the axillary temperature was 103.8°, pulse 114. During the following six days the temperature fell in the morning, followed by evening exacerbations;

highest evening temperature 105°, lowest 99.4°. No unusual symptoms until the morning of third day, then headache; chill at 3 P.M. Examination revealed pseudo-membrane completely covering vaginal erosions; lochia suppressed; pain in abdominal region increased. Staphylococci and Klebs-Loeffler bacilli present. On the seventh day, vomiting attack; respiration short and irregular; diarrhea with signs of beginning peritonitis. On the tenth day dermatitis simulating serpiginous erysipelas developed, with great swelling of right labium, extending gradually over the gluteal region, down the thighs, up the back to the spine and inferior border of scapula. Serum was then given, extension continuing until temperature became normal, when desquamation began.

Thirteen days after delivery, midnight, with temperature 103.6°, pulse 92, 10 Cc. (1000 units) of anti-diphtheritic serum were administered hypodermically. One hour later, temperature 104.2°, pulse 92; three hours, 103.2°, pulse 88; five hours, 103.6°, pulse 90; seven hours, 101.8°, pulse 90; nine hours, 101.6°, pulse 90; thirteen hours, 102.6°, pulse 94. Sixteen hours after first injection a second and like injection was given; temperature one hour later, 102.6°; two hours, 101.8°, pulse 88; four hours, 103.6°, pulse 90. During the next three days, morning and evening rise lessened; temperature was normal for the first time the fourth day after inoculation, remaining normal after the fifth day.

Locally, hydrogen peroxide, two ounces, every two hours; intra-uterine douche, bichloride 1:5000, twice a day for three days; permanganate-of-potassium (one grain to the ounce) douche every day; nuclein hypodermically, 80 drops, three times a day; quinine and whiskey *ad libitum*. Two similar cases, confined within the subsequent twenty-four hours in the same institution but not treated with antitoxin, terminated fatally.

Table of Twenty-five Cases of Diphtheria Treated with Anti-diphtheritic Serum at Harper Hospital, Detroit, Mich.

Case No.	Day of Disease	Age.	Character.	Type.	Paralysis	Albuminuria.	Exanthem.	Time in Hospital	Result.	Amt. of Antitoxin Used.	Notes
I.	2d.	17	Severe.	Tonsillar, pharynx.	Palate.	None.	Erythema.	28 days.	Recovered.	26½ Cc.	1000 units.
II.	2d.	3	Severe.	Tonsillar, pharynx.	None.	None.	None.	22 days.	Recovered.	10 Cc.	1000 units.
III.	4th.	9	Moderate.	Tonsillar, pharynx.	None.	None.	None.	11 days.	Recovered.	10 Cc.	1500 units.
IV.	2d.	10	Moderate.	Tonsillar, pharynx.	None.	Slight.	None.	13 days.	Recovered.	10 Cc.	1500 units.
V.	3d.	3	Severe.	Tonsillar, pharynx.	None.	None.	None.	27 days.	Recovered.	10 Cc.	1000 units.
VI.	2d.	7	Mild.	Tonsillar, pharynx.	None.	None.	None.	14 days.	Recovered.	10 Cc.	1000 units.
VII.	5th.	2½	Severe.	Pharynx, larynx.	None.	None.	None.	26 hrs.	Died.	10 Cc.	1000 units.
VIII.	2d.	9	Mild.	Tonsillar.	None.	None.	None.	.....	Recovered.	10 Cc.	1000 units.
IX.	1st.	7	Severe.	Tonsils, pharynx.	None.	None.	None.	20 days.	Recovered.	10 Cc.	1000 units.
X.	2d.	10	Severe.	Nares, pharynx.	Palate.	Present.	None.	23 days.	Recovered.	30 Cc.	1000 units.
XI.	2d.	3	Severe.	Nares, pharynx, larynx.	None.	None.	None.	2½ days.	Died.	10 Cc.	1000 units.
XII.	12 hrs.	23	Severe.	Pharynx.	Palate.	Present.	None.	21 days.	Recovered	30 Cc.	1000 units.
XIII.	3d.	5	Severe.	Tonsils, larynx, pharynx.	None.	Present.	None.	23 days.	Recovered.	30 Cc.	1000 units; intubation and tracheotomy.
XIV.	3d.	15	Moderate.	Pharynx.	None.	Present.	None.	17 days.	Recovered.	10 Cc.	1000 units.
XV.	1st.	7	Moderate.	Nasal, pharynx.	None.	None.	None.	10 days.	Recovered.	10 Cc.	1000 units.
XVI.	3d.	1½	Moderate.	Pharynx.	None.	None.	Urticaria.	24 days.	Recovered.	10 Cc.	1000 units.
XVII.	3d.	3	Moderate.	Pharynx.	None	Present.	Urticaria.	15 days.	Recovered.	20 Cc.	1000 units.
XVIII.	3d.	1¾	Severe.	Larynx.	None.	None.	Urticaria.	32 days.	Recovered.	50 Cc.	1000 units; tracheotomy.
XIX.	11th.	14	Severe.	Pharynx, larynx.	None.	None.	Urticaria.	25 days.	Recovered.	30 Cc.	1000 units; tracheotomy.
XX.	2d.	7	Severe.	Larynx.	None.	Present.	None.	48 days.	Recovered.	26 Cc.	1000 units; intubation and tracheotomy.
XXI.	1st.	21	Mild.	Tonsillar, pharynx.	None.	None.	Urticaria.	12 days.	Recovered.	10 Cc.	1000 units.
XXII.	2d.	8	Severe.	Tonsillar, pharynx.	Palate.	Trace.	Herpes.	16 days.	Recovered.	30 Cc.	1000 units.
XXIII.	12 hrs.	19	Severe.	Tonsillar, pharynx.	None.	None.	Herpes.	16 days.	Recovered.	18 Cc.	1000 units.
XXIV.	3d.	7	Severe.	Tonsillar, pharynx.	None.	Trace.	None.	14 days.	Recovered.	20 Cc.	1st 1500 units, 2d 1000 units.
XXV.	4th.	21	Severe.	Nasal, pharynx, larynx.	None.	Present.	None.	42 days.	Recovered.	30 Cc.	1000 units.

Summary—Twenty-five Cases.

Treatment begun:	No.	Per Cent.	Died.
First day of disease	7	28	0
Second day of disease	7	28	0
Third day of disease	7	28	1
Fourth day of disease	3	12	1
Fifth day of disease or later	1	4	0

Age Distribution:	No.	Per Cent.
Cases under 5 years	7	28
Cases under 10 years	9	36
Cases under 15 years	4	16
Adults	5	20
Sequelæ:		
Paralysis	4	16
Albuminuria	8	32
Exanthem	8	32
Died	2	8
Character of Diphtheritic Attack:		
Mild	3	12
Moderate	6	24
Severe	16	64
Type:		
Laryngeal	7	28

TEMPERATURE REACTIONS.

Temperature being 102° or above at time of injection:		
Number of injections		13
Followed by direct fall of temperature (1° to 4°) within 15 hours	7	
Slight rise (.2° to 1.5°) followed by marked fall	5	
No effect (.2°)	1	
Temperature being below 102° at time of injection:		
Number of injections		34
Followed by immediate fall (2–4 hours)	17	
Followed by rise and fall	14	
Slight effect	3	
Temperature variation less than .5°	6	
Followed by continuous remission	11	
Total number of inoculations		47

Cases I and II were attended by Dr. D. S. Campbell; III and IV by Dr. Gailey; V to XI, XIII and XIV by Dr. Mulheron; XII and XXI by Dr. E. L. Shurly; XV to XX and XXII to XXV by Dr. Geo. Duffield; XXVI by Drs. Manton, Longyear, Carstens, and Jessie L. Herrick.

CONCLUSIONS:

1st. The cases were under constant observation from the time of admission to discharge; this being in contradistinction to cases observed in private practice.

2d. Nurses of the Farrand Training School were on special duty night and day.

3d. Diagnosis of every case was verified by bacteriological examination.

4th. Cases were not selected; admitted in all stages of the disease.

5th. There were four cases of tracheotomy, two being combined with intubation. All recovered.

6th. The use of repeated doses of the serum (from the laboratory of Parke, Davis & Company) was of the greatest importance.

7th. No case died that was treated within two days of invasion.

8th. No case developed laryngeal stenosis after anti-diphtheritic serum was given.

9th. No case developed anuria, convulsions, or severe hemorrhages.

10th. No abscesses.

11th. No deleterious effects.

12th. None of the cases under treatment became septic.

13th. No constant effect on the temperature or pulse. Temperatures above 102° usually fell one to five degrees in fifteen hours.

14th. The membrane loses its progressive character under this treatment.

15th. No case of heart paralysis or other heart lesion developed.

16th. Four cases very suddenly improved.

17th. Sixteen cases were above average severity.

18th. Albuminuria developed in eight cases. With one exception, all showed normal reaction before discharge. No casts found.

19th. Paralysis was not prevented. Four cases, or sixteen per cent., developed. Average without antitoxin, ten to twenty per cent.

20th. Rash developed in eight cases, quickly disappearing.

21st. There were two deaths, or eight per cent., one case being moribund on admission.

22d. One case recovered, with typical reaction, when injected on the eleventh day of the disease.

23d. The serum does not interfere with the use of local disinfectants or antiseptics.

24th. Subsidiary local and constitutional treatment must not be neglected.

25th. In the future we shall not feel justified in neglecting serum therapy.

26th. It is a specific remedy when used early.

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*EPISCLERITIS AND ITS TREATMENT.**

By C. A. Veasey, M.D.,
Adjunct Professor of Ophthalmology in the Philadelphia Polyclinic; Chief Clinical Assistant to the Ophthalmological Department of the Jefferson Medical College Hospital; Consulting Ophthalmologist to the Philadelphia Lying-in Charity Hospital, etc.

Episcleritis is a form of localized inflammation occurring in the anterior segment of the eyeball, and affecting that portion of the en-

* The substance of a lecture delivered before the class at the Philadelphia Polyclinic.

velope of the eye which lies between the conjunctiva in front and the dense sclera proper behind, or what is usually known as the episcleral tissue. It usually appears as a small reddish or purplish nodule, sometimes elevated, sometimes flat, the most frequent point of selection for the primary patch being somewhere in the ciliary region between the corneo-scleral margin and the insertion of the external rectus muscle, though it may appear in any portion of the episcleral tissue lying in front of the equator of the eyeball.

This primary nodule is the centre of a circumscribed inflammation, the vessels in which assume a violaceous tint, and over which the somewhat swollen conjunctiva can be freely moved, the inflammatory patch itself being firmly attached to the sclera and immobile.

The subjective symptoms vary greatly in different cases. In some there is very little discomfort experienced; they simply come to us complaining of a small patch of redness on the eyeball. In others there is the most excruciating pain, supra-orbital and temporal in character and occasionally appearing in the occipital region, depriving the patient of sleep. In addition there is photophobia, lachrymation, and great tenderness on pressure, the patient shrinking backward when the least pressure is made upon the eyeball through the closed lid.

These symptoms begin to disappear gradually in the course of a few weeks, the nodule is being absorbed, and just as we are congratulating ourselves that the inflammatory process is about to terminate, another nodule makes its appearance in the neighborhood of the first one, and the same tedious inflammatory process has to be again contended with. It may be that the patient gets entirely well of the first attack and has an intermission during which the eye is in an apparently healthy condition, before the second nodule makes its appearance. But in the majority of cases it does make its appearance, and frequently the attacks continue to recur, one after another, with very little intermission, until the whole circumference of the sclera has been involved; and whenever a nodule disappears it leaves in its place a bluish-gray spot, so that sometimes a complete line of such spots can be observed encircling the sclera some distance from the corneal margin, forming a circum-corneal zone. When this stage is reached the disease has usually spent itself, and recovery takes place, a nodule rarely, if ever, appearing on a site occupied by a former one.

The causes of this disease are as numerous and varied as its symptoms. The general consensus of opinion seems to be that it is more frequent in women than in men, and certainly this has been my experience, though it is claimed by some to appear more frequently in the male sex. It is also more often seen in adults than in young people. Disorders of menstruation and uterine affections in general, as well as the different diatheses, such as the scrofulous, the syphilitic, the rheumatic, the gouty, the malarial, and the uric-acid, are all undoubtedly predisposing causes. Some attacks can be traced to exposure to the weather, while others seem to be idiopathic in origin.

The two affections most likely to be confounded with episcleritis are phlyctenular conjunctivitis and phlyctenular kerato-conjunctivitis. In the latter disease the nodule is situated at the corneo-scleral margin. In phlyctenular conjunctivitis it is situated away from the corneal margin and more nearly resembles episcleritis; but in episcleritis the nodule never ulcerates, while in the other two affections it generally does ulcerate. Again, in episcleritis the swollen conjunctival vessels are readily moved *over* the episcleral patch, showing that it lies beneath the conjunctiva, the latter membrane being the one that is inflamed in phlyctenular conjunctivitis and, in addition to the cornea, in phlyctenular kerato-conjunctivitis. It is not always an easy matter to distinguish between episcleritis and scleritis in the early stages, as there is no marked visible boundary line between the superficial and the deep scleral tissue. But the course always determines the disease: episcleritis, beyond being a long, tedious, and constantly recurring affection, ends in no injury to the globe of the eye, while scleritis almost always causes some serious consequences by an extension of inflammation to some of the internal structures, especially the uveal tract, and in subsequent thinning and staphylomatous bulging of the sclera.

The course of the disease is essentially a chronic one, and no matter how slight the inflammation may be when the case comes under observation our prognosis should be a guarded one. The disposition to recurring attacks should be fully explained and the patient assured that although the duration of the affection sometimes extends over a period of several months, or even years, the ultimate outcome is good, as there very seldom results any permanent injury to the visual acuity.

It is readily understood that a disease that

can be attributed to so many different causes necessarily has no one specific plan of treatment. The primary cause in each case must be ascertained, if possible, and removed, and the special symptoms combated as they arise.

Should there be found any trace of syphilis, the anti-syphilitic remedies, mercury and iodide of potash, must be pushed to the point of tolerance. And in connection with the administration of these two remedies it is well to bear in mind that the patient can be more readily brought under the influence of the former drug by inunctions or by hypodermatic injections than by absorption through the stomach, and that the latter drug will be less liable to disagree with the patient if administered each time in a large quantity of water and between the periods of greatest activity of the stomach, in other words about two hours and a half after the ingestion of meals.

If there is any indication of rheumatism or gout — and, according to some authorities, these two diseases, or at least the diatheses, are the exciting causes of the larger number of cases of episcleritis—some form of the salicylates or colchicum must be administered. If the uric-acid diathesis be present, some of the uric-acid solvents are indicated, in addition to the imbibition of large quantities of natural spring mineral waters containing lithia. Should the scrofulous or tubercular diathesis be found, the administration of cod-liver oil and creosote is indicated, as would be quinine if malaria were detected.

Diaphoresis obtained either by the administration of pilocarpine, by the mouth or hypodermatically, or by means of the Turkish bath, frequently assists materially in hastening the process of absorption; but prior to the employment of diaphoresis by any method the condition of the heart should be carefully ascertained.

In appropriate cases careful search must be made for any uterine disorder. The speaker has seen several patients suffering from episcleritis, who in spite of all the treatment being given them failed to get any better, rapidly improve as soon as some slight uterine difficulty had been corrected.

For the local treatment of the eye itself no strong astringents or irritating remedies should ever be used. They do more injury than good. If there is any secretion from the accompanying conjunctivitis, the conjunctival cul-de-sac can be washed out two or three times daily with a saturated solution of boric acid. If the inflammatory process be very severe, two or three Swedish leeches can be placed on the temple or at the angle of the eye. Compresses as hot as can be borne, continued for fifteen to twenty minutes at a time and repeated every three or four hours, often add to the comfort of the patient and in addition assist to promote absorption of the inflammatory products. Should there be the least tendency to iritis, a solution of atropine must be instilled sufficiently often to keep the accommodation paralyzed. On the contrary, if there be no sign of such complication a solution of eserine and cocaine may be more soothing, about one-sixth of a grain of eserine and five grains of cocaine to the ounce of distilled water, a few drops to be instilled into the conjunctival cul-de-sac every three or four hours, or even more frequently if the pain be severe. In some cases the use of a pressure bandage at night relieves the patient of pain to such an extent that more refreshing sleep can be obtained.

Should the patient not be relieved of the pain by the above means, it becomes necessary to resort to the use of some drug to accomplish the purpose. Of these the best seems to be antipyrin or phenacetin in five- or ten-grain doses, repeated if necessary. I have occasionally gotten rid of much of the accompanying neuralgia by having rubbed into the skin over the course of the supra-orbital nerve, and into the temple, an ointment composed of equal parts of mercurial and belladonna ointments with just enough lanolin added to make it more pliable.

Electricity has also been frequently used of late, and is best applied by means of the galvanic current, the positive pole being placed over the closed lid, the negative pole behind the ear or on the back of the neck. The amount given is about two milliampères, and a daily séance should be held, at first lasting from three to five minutes, the time between the séances to be increased and the duration of the application lengthened. Many cases that resist all other means of treatment and that seem hopeless as far as shortening the duration of the disease is concerned, can be markedly improved by a few applications of galvanism.

Within the past few years many excellent reports have been published concerning the treatment of this affection by means of the subconjunctival injection of a solution of mercuric chloride. The strength of the solution is 1:2000, and about four minims are injected beneath the conjunctiva in the neighborhood of the nodule, the conjunctiva having

first been cocainized, the injection to be repeated as soon as the reaction has subsided, usually in three or four days. The speaker has seen some wonderful and rapid results follow the use of this method, one case in particular being relieved after one and cured after three injections, after various other means of treatment had been employed for several months; but he has also had some disappointing results.

Recent reports seem to show that it is not altogether the mercury that causes the improvement in the cases in which these injections have been made beneath the conjunctiva. Injections of distilled water alone have given some equally good results. Inasmuch, however, as distilled water injected beneath the conjunctiva causes considerable pain, a solution of sodium chloride has been employed—about a two-tenths of one per cent. solution. My own experience with the latter method is too limited to enable me to speak for or against it. Further clinical investigation will have to determine the comparative value of each.

After the acute inflammatory symptoms have subsided, if the absorption of the nodule seems to be too slow the process may be hastened by massage through the closed lid either with or without the yellow-oxide-of-mercury ointment.

In all cases it is understood that the patient must be placed in a proper hygienic condition, and that any errors of refraction or any muscular insufficiencies must be properly corrected.

Sometimes, in spite of all the treatment we can institute—and we are occasionally obliged to go through the whole long list—the duration of the disease seems to be unmodified, extending over a period of months, or even years.

47 NORTH SEVENTEENTH STREET.

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*THE ROLE OF FEVER IN THE MODIFICATION OF DISEASE.**

BY H. A. HARE, M.D.,
Professor of Therapeutics in the Jefferson Medical College of Philadelphia.

When Dr. Foster asked me to be your guest this evening, I accepted the honor as one which was a pleasure in its conception, in its prospect, and, I now find, in its existence.

I shall not consume all the time of my address with a single line of thought, but consider three topics which I believe are of interest to us all. The first of these is, the rôle played by fever in the modification of disease, when it is due to an infection by germs or a poison; the second is, the reason why antipyretic drugs do harm; and the third, the rational explanation of the good results obtained by cold bathing.

One of the most extraordinary facts in connection with practical medicine is the rapidity with which certain views in regard to pathology and treatment change, and perhaps no better evidence of this can be found than the subject of which I shall speak tonight. As long ago as the time of Hippocrates that individual expressed the belief that fever was a protective process, and many others more or less remote from our times have endorsed this view, so that we find the professional mind first regarding the fever as salutary, then as an annoying symptom, then as a symptom to be regretted, and very recently as a symptom to be controlled as a crying evil.

Notwithstanding the fact that the usefulness of fever has been recognized in the past, it is my intention to bring forward additional evidence in support of this view and against the view that fever is harmful; or, in other words, to show, by the introduction of the newer evidence produced in recent years by bacteriological and other research, that fever is not an unmitigated evil, and that when we reduce fever by the use of drugs we not only remove a symptom but deprive the body of a therapeutic measure devised by nature for the protection of the individual.

It is scarcely a few months since a majority of us were endeavoring with a praiseworthy ardor to reduce all fever by the use of antipyretic drugs, and it is interesting to note how the profession gradually became more and more impressed with the importance of antipyresis until finally it was swept off its feet by the rising wave of what might be called febriphobia, and then was kept off its feet by the assistance of those persons whose pecuniary interests lay in drugs which reduced fever.

Let us first discover whether fever is a harmful process, and after that decide as to whether it is salutary. Like almost every question in medicine, this one is readily decided upon facts lying between two extremes of theory. There is an immense amount of evidence to show that fever is harmful and

* Address read at the second annual meeting of the Allegheny County Medical Society, at Pittsburgh, Pa., January 30, 1896.

causes great changes in certain organs if the temperature really becomes very high, say as high as 108° to 110°; but there is almost no evidence that it is harmful below this point, it having been proved that much if not all the morbid changes in structure thought to be due to the fever are really produced by the germs of the disease or their toxins, even if no rise of temperature has occurred. To assert, on the other hand, that fever is always innocuous or always useful, is distinctly wrong, from the standpoint of common sense no less than from that of practical laboratory and clinical experience.

The experiments of Welch and Naunyn show that animals can bear temperatures, artificially induced, which far exceed the normal, if only there be no additional strain thrown upon the organism by an infectious process; and Welch points out that there is clinical evidence in support of this in several conditions, notably relapsing fever. I would also call attention to the fact that in cases of thermic fever which do not reach excessive heights, secondary changes due to the fever occur very rarely if at all.

Having found that fever in fairly moderate degree is not harmful, we can progress to the demonstration of the fact that it is useful—a step forward which brings us in antagonism with the general trend of thought among practicing physicians, but which is more favorably looked upon by laboratory pathologists, provided an infectious process be present as the cause of the pyrexia.

The belief that fever is a protective against infection seems sanctioned by the following facts: *First*, fever is a condition developing in all healthy animals as soon as they undertake, as do all healthy animals, to resist infection; and while it may be urged that it is a coincident symptom alone, this hardly seems probable in view of its importance—that is to say, Nature would hardly devise a plan for vital resistance handicapped by such an important phenomenon if it were useless in itself. *Second*, animals which receive sufficiently large doses of germs or their toxins to cause death, beyond all doubt often develop very little fever or none at all, or, in other words, are so overwhelmed that resisting methods cannot be developed by the body. This is proved by clinical experience and the researches of Gamaleia* and others. *Third*, animals which receive smaller doses speedily develop fever and survive, but if the same dose be given and fever be prevented by artificial means they die as promptly as if large doses were used. *Fourth*, when an animal is immunized by repeated doses of toxic material, it has a febrile movement with each effort to develop antitoxin until it is completely immune, the fever being greatest in the most susceptible subject, decreasing with each infection as the animal's tissues find it less necessary to manufacture at short notice large amounts of antitoxin.

The first two propositions are so well founded as to need no citations to confirm them. In regard to the third I may quote the experiments of Loewy and Richter,* who found that if fever was produced by the Sachs-Aronsohn method of puncture of the corpus striatum, infection by the Klebs-Loeffler bacillus, the pneumococcus, the coccus of erysipelas, and the micro-organism of chicken-cholera, when the temperature of the body was 106° F. or thereabout, failed to cause death as soon as usual, even though 100 times the ordinary fatal dose was injected. Again, these investigators found that when three times the fatal dose of pneumococcus was injected, the animals with the highest temperature survived, and if swine-plague was injected the course of the disease was slower than usual if fever was present.

Having shown, then, that fever is a protective process, we can adduce evidence that its absence prevents the system of the animal infected from resisting with success the onslaught of its enemies. In this connection much evidence might be adduced, for we know that anything which lowers temperature decreases vital activity, but I shall confine myself to the more recent experiments bearing directly upon the effects of reduced temperature upon infective processes. Thus in the studies of Wagner† this author found that when chickens were infected by anthrax bacilli their temperature rose several degrees Fahrenheit and remained so for several days, and at the end of that time no bacilli could be found in their tissues, whereas if the chickens were kept cool by the partial immersion of their bodies in water they all promptly died and the symptoms of anthrax infection were typical. Similar results also ensued when the temperature was reduced by antipyrin, and the author goes on to state that five out of six of the infected chickens died. Ruffer has pointed out as a result of

* *Annales de l'Institut Pasteur*, 1888, No. 5, p. 229.

* *Deutsche Med. Woch.*, April 11, 1895, p. 240.

† *Centralblatt für Bakt. und Parasit.*, 1891, p. 322.

his experiments that "the struggle between micro-organisms and the animal cells is a physiological process always going on in the tonsils and Peyer's patches, the microphages and macrophages being victorious in the healthy animal. If these structures are weakened from any cause—*e. g.* over-fatigue, cold, nervous shock,—a local disease follows the multiplication of micro-organisms in the tonsils. An increased emigration of phagocytes may limit the process to the tonsils even then, or the micro-organisms may break through the barrier of these cells, invade the animal's body, and the disease become general."

Without going fully into the experiments made by Pasteur, Nocard and Roux, Platania, Canalis and Morpurgo, Arloing, Charrin and Ruffer, Roger and Herman, it may be mentioned that Charrin and Roger have proved that white rats, which, as a rule, are immune against anthrax, take the disease readily when the animals suffer from muscular over-exertion; and Bouchard has shown that "when a healthy animal is exposed to the influence of cold for a considerable time, the micro-organisms readily pass from the alimentary canal and lungs into the blood; whilst the influence of hunger as a predisposing factor has been ably studied by Italian observers. The exhaustion produced by fever, want of food, etc., during the course of an infectious disease, must necessarily help the microbes of suppuration in their endeavors to penetrate into the internal organs." Pasteur also records the fact that chickens infected by anthrax survive, but if cooled they promptly succumb. Rorighi also found that if guinea-pigs were cooled they resisted infection very badly, whereas if the fever persisted they survived longer or recovered. He reached similar results with pigeons. Walther reached similar results with the Fraenkel pneumococcus.* In other words, everything which tends to lower bodily temperature increases the susceptibility to disease of an infectious nature.

The dominant tendency of all lethal poisons is to cause a fall of bodily temperature, and the effort of nature is to combat this by an increase in heat-production. The well known experiments of Brunton showed, for example, that the maintenance of bodily heat saved the lives of animals otherwise fatally poisoned by chloral, and we have just adduced evidence, not only that a rise of temperature saves life in an infectious poisoning, but that a loss of temperature aids in the fatal result.

In support of the fourth proposition we have the well known studies of many experimenters as to the production of immunity by the development of antitoxin.

The studies of the Klemperers in connection with pneumonia are in this connection most interesting, for by the injection of the products of the *Micrococcus lanceolatus* into animals they were able to render the animals immune to infection by the organisms themselves, although these organisms continued present in an unchanged form as numerous as ever. In other words, they caused a development of antitoxin in the tissues, which enabled the animals to resist the toxin of the germs. More important than this, however, is the fact that the immunizing power of the toxin was found to be very much increased when the latter was subjected to a temperature higher than the normal temperature of the animal, before being injected. Thus, if heated to about 106° F. for some time previous to injection, the development of immunity was much more rapidly produced than when cooler injections were made, immunity being reached in a few days in one case and not for fourteen days in the other, and then only after large amounts had been given. Further than this, if previously heated toxin is introduced into the circulation, the systemic reaction is slight, whereas if the toxin is not heated the systemic reaction is far greater.

The Klemperers think, and it seems to me with good reason, that the object of this high fever following immunizing injections is to produce similar effects to those obtained by heating the toxin before injection—or, in other words, that fever in some way aids the body in acquiring immunity by the formation of antitoxin; and this is proved by the fact that days are required for the production of immunity by toxin injections, but instant immunity is attained if serum from an already immunized animal be injected, for in it the antitoxin is already present. The Klemperers assert that the development of crisis in croupous pneumonia occurs at the time when the body has produced sufficient antitoxin to antidote the toxin, and if fever has no connection with the process of immunization it is curious that the fall of temperature and completion of the immunizing process should occur simultaneously. It is also interesting to note that croupous pneumonia, while it

* For an interesting paper on this topic, see Max Müller, *Zeitschrift für Hygiene und Infectiouskrankheiten*, bd. xx, heft ii, August, 1895, p. 245.

usually has its crisis about the eighth or ninth day, may have it as early as the third or fourth. In other words, the individual attacked develops immunity by the making of antitoxin so rapidly that the poison of the disease is antidoted by the fourth day.

Neither the fever, the toxin nor the antitoxin has, however, much effect upon the infecting power of the germ of pneumonia, for that germ is found in some cases in equal numbers and as well developed after an attack of pneumonia as it was at the beginning, and remains so in the lungs for a long time, although Pipping* asserts that high fever changes the form of the micrococcus and renders its development more slow. This resistance is not true of all germs causing disease, for, as Gamaleia has pointed out, in anthrax-infection destruction of the bacilli can be found going on in the subcutaneous tissues at the point of infection, in the lymphatic glands, bone-marrow, and spleen, during the febrile period. This destruction is not due to leucocytosis.

As a result of this summary of the subject, I think we can affirm that fever does aid in the production of immunity, and that this is probably due to the increased rapidity of the vital processes produced by the rise of bodily temperature. In other words, the functional activity of all the organs and tissues being increased, the various methods adopted by Nature for the protection of the body against infection are stimulated to the utmost. These functions exist in several parts, and it is generally recognized to-day that in the presence of infection one or all of these several protective processes are carried out in the body. In the first place, the emunctories relieve the patient's system by eliminating toxic materials; second, the glandular system protects the body from these poisons by oxidation and by the development of leucocytes whereby in turn phagocytosis is developed and antitoxin formed, and, finally, fever is produced, which there is every reason to believe is either distinctly detrimental to the germs or their toxin or so stimulant to the tissues or glands that antitoxin is more freely manufactured.

It is not necessary to dilate upon the importance of the emunctories such as the skin, kidneys, and bowels, in excreting effete materials from the body. Every one of us knows that if we can keep these parts active during an infectious disease, as, for example, scarlet fever, we will have recovery as the probable result, and we also know that just so soon as they become inactive grave symptoms arise.

The well known experiments of Schiff and Lautenbach have shown that the ability of the glandular apparatus, particularly the liver, to destroy poisons, is extraordinary; and this ability depends upon the blood-supply and vascularity of the gland, for it was also found by them that the mere passage of the poison through a large capillary network greatly reduced its toxic power by oxidation. Thus the liver, when unimpaired in function, destroys large amounts of poison which, but for this gland, would speedily cause death. Even in so low an animal as the frog these experimenters found that doses of nicotine which were without great effect in the intact animal caused death at once if the circulation of the liver were tied off or this gland removed; and we all know clinically that just so soon as the function of this gland is impaired by congestion, inflammation, or other disease (like cirrhosis), there develops a train of symptoms commonly called biliousness, or in its severe forms something worse, which is typically a condition of toxemia even to disturbances of vision, dilated pupils, fever, and collapse. Increased glandular activity all over the body means, therefore, two important changes—first, an increased blood-supply to the gland, that is, an increased capillary circulation with consequent increase in the oxidizing power of the part; and second, an increase in bodily heat due to the glandular activity, for we know that increased oxidation means increased heat, and that the bodily heat is largely maintained by this means. It seems hard to imagine that Nature would develop so good a method for destroying poisons, only to develop simultaneously an evil in the shape of fever; and the fever, as we have pointed out, is not a mere symptom or by-product of the process, but a distinct aid to the organism,—not simply a result of vital activity, but the most powerful stimulant to every part of the body, and most notably to the heart, which in turn beats more rapidly and forcibly and so increases the blood-supply to the tissues which are needing an increased amount of oxygen and nourishment in performing their increased duties.

The glands of the body not only act in the way just described, but in addition they develop leucocytes, which possess the power in many cases of destroying the germs of disease by phagocytosis, or by aiding in some as yet

*Fortschritte der Medicin, 1886, No. 14, p. 449.

unknown way in the formation of antitoxin. The theory of phagocytosis is one of the most attractive of all those advanced by bacteriologists, notably by Metchnikoff. It will be remembered that the growth of infecting micro-organisms is at once arrested by their ingestion and digestion, so to speak, by the leucocytes which surround them, just as an amœba surrounds a diatom. The number of leucocytes as compared to the number of infecting germs is as important as the number of soldiers in an army, and the part which can bring a great array of leucocytes against the invaders is with difficulty infected, unless there be injected simultaneously with the germs some irritant or poison which destroys the leucocytes and gives the germs time to become too invincible by multiplication and the development of their own poison which protects them from the leucocytes. Thus it has been found, by Metschnikoff, Ruffer, and others, that if infecting germs be placed under the skin of a rabbit, no infection ensues if the leucocytes can attack and destroy them; but if the smallest possible infecting dose be given by inserting beneath the skin germs protected by bibulous paper from the leucocytes, the animal ultimately dies because the nutritive juices passed through to the germ and its poisons pass out readily, but the leucocytes cannot get at the germ itself.

A further discussion of the facts for and against phagocytosis is not necessary, but we cannot overlook the important fact that in nearly every infection there is an enormous development of leucocytes, and that in cases of such malignancy that death speedily occurs we find no increase in leucocytes, either because they are vanquished by the overwhelming army of invasion, or because the system has had no time to carry out leucocytosis. So true is this that in that typically infectious malady called croupous pneumonia, one of the surest signs of a malignant attack is the lack of an increase in leucocytosis. Increased leucocytosis is therefore a much-to-be desired result; and as fever causes as well as results from increased glandular activity, it may stimulate the development of leucocytosis and aid in destroying the infection.

That fever does aid in the production of leucocytosis *per se* is, however, a matter of doubt, and the experiments of Carter of Philadelphia and of other investigators, such as Rorighi and Ischlenoff, seem to indicate that there is no relationship between a pure rise of temperature and leucocytosis—that is to say, artificially produced fever does not increase the number of leucocytes in the blood,—but if certain infections are present, their increase becomes extraordinary. From these facts the conclusion has been reached that fever and increased leucocytosis are coincident and do not bear the relation of cause and effect. On the other hand it is equally true that in some conditions leucocytosis ceases the moment the temperature of the patient falls to the normal. Thus, in pneumonia, leucocytosis ceases with the crisis—which result may be due to other causes, of course, than the fall in temperature. Taking it all in all, therefore, we must conclude that whatever value fever may have in infectious diseases, it does not do good always by aiding leucocytosis, if these experiments can be relied upon.

Many years ago it was the effort of physicians to reduce fevers by diaphoresis and diuresis, and they often succeeded in aborting febrile movement or aiding in its arrest or fall by measures too often to-day considered homely and useless. The fact remains, however, that whether they succeeded or not in relieving fever, they did no harm, and if the fever was severe enough to resist their measures the patient remained equally able to resist the onset of the infection producing it. The trouble, if preventable, was set aside; and if not, its true course and the object of its existence were not masked by powerful drugs. Further than this, two admirable results were attained, namely, that the skin and kidneys were flushed, cleansed, and made ready for the task of eliminating materials which we call to-day "toxins," and any poisonous material already formed in the tissues or bowels was gotten rid of. Unfortunately for the profession, it was discovered that digitalis sometimes reduced fever, and, as this symptom was often the most manifest and annoying, this drug began to be used for the reduction of temperature, and with it quinine began to take a valued place on account of its antipyretic and specific effect in malarial fevers. It was the fact that quinine was futile during the early stages of all fever not malarial that roused the desire for something more active, and the nearness of the period of ridiculous fear of exposure to cold in fevers excluded cold applications from the therapy of such cases. As a result salicylic acid was employed, and from this it was but a step to the common antipyretics of to-day.

There is, however, abundant evidence to

show that the older methods of reducing fever in mild infectious cases by the production of sweating and increased glandular secretion all over the body had a far more rational basis than has the employment of antipyretic drugs, and that fevers which they failed to abort ran their course in many cases to the distinct benefit of the patient; further, that antipyretic drugs in reducing fever decrease the vital resistance of the patient, and that the use of the cold bath or cold sponging as employed to-day does not do good by the reduction of temperature so much as by increasing glandular and other vital activities.

Bearing in mind the four methods of Nature just named, for the protection of the body—namely, elimination of poison by the emunctories, the development of antitoxin by the glands and other tissues, the production of fever to stimulate and support the system and as a result the increased functional activity, and the development of leucocytosis —we can now go still further and show that the use of antipyretic measures is only to be resorted to in cases where the fever is excessive, and that, if employed, only those are to be used which reduce the fever moderately and either increase the ability of the system to antagonize the infection or at least do not hinder it from doing so. For these last reasons I believe that antipyretic drugs should very rarely be used for the purpose of reducing fever, for they not only remove fever, but at the same time depress the nervous centres governing heat-production, and increase the work of the emunctories already loaded down by the poison brought to them for elimination; and, more important than all to those who believe in phagocytosis, they arrest the development of leucocytosis and thereby remove one of the means of destroying the germs of disease (according to one theory), or of developing antitoxin (according to another). I am well aware that there is contradictory evidence in regard to the view that coal-tar products inhibit leucocytosis, but I believe that any evidence against my statement can be set aside in view of the fact that moderate variations in the number of leucocytes take place with or without the effect of drugs or infection. Further than this, we have already quoted authority showing that the use of antipyretic drugs increases the fatal tendency of an infection.

The studies of Jacubowitsch, Müller and others prove very conclusively that antipyrin at least greatly decreases the elimination of urea by the urine, and the first-named writer vehemently condemns its use for this reason. It also decreases urinary flow, which is a distinctly harmful effect when we wish the excretion of effete materials from the body. Again, antipyrin tends to interfere with the poison-destroying function of the liver by congesting it, for, as pointed out by Baruch, the weight of the liver after death from infectious disease treated by antipyretics is found to be ten to twelve grammes heavier than in those dying of typhoid fever treated by cold baths. Porter asserts that these antipyretics in the presence of fever may cause granular and fatty degeneration in the kidney and liver.

These experimental facts seem well founded upon clinical results, for under this method of treatment the mortality of infectious diseases has been as high or higher than when antipyretics, as we call them, were practically unknown; the death-rate from typhoid fever, for example, under antipyrin or similar treatment, being about twenty-five per cent., while in cases treated by the cold bath it is from one to five per cent. as a rule.

The natural thought is that if antipyresis is harmful when obtained by drugs, it is also harmful when obtained by cold baths. Yet clinical results prove the contrary. The fact that cold bathing does decrease the mortality of typhoid in the general run of cases is established, and it is not credible that the mere abstraction of heat can influence the progress of so grave a disease. I have long felt that the cold bath did more than abstract heat, and I venture to advance the idea that it does so by permitting the tissues to destroy the poison of the disease by oxidation or allied processes. By the use of antipyretic drugs we prevent fever by decreasing the production of heat, and thereby inhibit oxidation processes in those tissues which develop the most heat and destroy the greater part of the infecting poison, be it microbic or a toxin from the growth of germs. That is, we prevent the body from performing the protective work which it would do under the sole guidance of Nature. On the other hand, if the bath be employed, we actually increase the temperature of the internal organs, as shown by Liebermeister,* who found that the internal temperature of the body was raised by the use of cold externally, and the more the cold the greater the rise. Foster also points out that when the naked body is ex-

* Handbuch der Pathol. und Therapie des Fiebers, p. 102.

posed to cold for a short time the internal temperature rises. The reason of this seems to be that the blood seeks the centres, and the central organs immediately produce more heat to make up for the loss at the periphery. Therefore the cold bath really increases the destruction of toxin, if I am right in believing that heat does aid in combating infection. The cold bath abstracts heat only, and if used in moderation, as it is when properly employed, in all fevers actually increases bodily metabolism or tissue-interchange, and consequently acts in much the same manner that an increased draught increases and makes more perfect the combustion of coal in a stove.

Liebermeister, Röhrig and Zuntz have also shown that the use of cold applied externally increases oxidation in the body so that a larger amount of oxygen is taken up and more CO_2 eliminated; and the experiments of Thermes show that cold bathing increases the number of the blood-corpuscles and the amount of their hemoglobin. Winternitz has confirmed this observation.

The differences in the effect of the antipyretic drug and the bath are notable. Thus, if we consider the body as a stove, and the tissues producing heat as the coal, and the coal to be mixed with impurities which can only be destroyed by oxidation, we can illustrate the effects of antipyretic drugs and baths very well. The object is to prevent the stove from being injured by overheating, and yet to destroy the poisons in the coal by heat. If the fire in the coal is smothered by antipyretics, so that less heat is produced, the stove (or the body) is in no danger of injury by heat, but the impurities mixed with the coal are also left intact and do injury; whereas if the coal is allowed to actively burn, and the stove kept moderately cool by the use of water or ice placed around it, the impurities are destroyed, and the usefulness of fever is attained without damage from excessive heat.

Elaborate clinical studies in hydrotherapy in fevers and other diseases not associated with fever show that the cold bath also stimulates glandular activity and leucocytosis, improves the tone of the circulation and nervous system, and increases vital activity everywhere, and that it also increases the urinary flow and the quantity of solids in the urine. Thus, Winternitz has shown in one of his recent papers that all applications of cold to the entire surface greatly increase the number of leucocytes and the percentage of hemoglobin; and Thayer of Baltimore has confirmed these observations—finding in typhoid fever, for example, that the number of leucocytes was increased from two- to nearly four-fold.

The question which naturally arises at this point is, whether there is an actual increase in the number of leucocytes produced by the cold bath, or whether they are gathered from various areas of blood-cell production and sent out into circulation. Some unfinished studies of Thayer would seem to bear out the latter view, and this is what we certainly expect to be the case. In either event we can rest assured that the drawing of these cells into the active circulation does good, whether we believe in the theory of leucocytosis as a protective process or not, for inactive non-circulating leucocytes are of little more value than none at all.

Jaquet, of Basle, finds that the number of blood-corpuscles is often considerably diminished in fever, but after a bath of ten minutes' duration at 27° C., in most cases, one observes an increase of blood-corpuscles to the extent of 500,000 per cubic millimeter. In health a cold bath has the same effect, but to a less extent. Antipyrin has no such action, even when given to the extent of sixty centigrammes. Jaquet produced in rabbits an artificial hyperthermia by keeping them at a uniform temperature of 37° for twenty-four to thirty-six hours, until their temperature reached 40°–42° C. Blood drawn from the ear showed a considerable diminution in its red corpuscles, while on the contrary there was a decided increase in the corpuscles of the liver. It would seem, therefore, that in fever the corpuscles accumulate in those organs where the circulation is slowest, *e. g.* the liver, and the cold bath acts like a tonic on the circulation and tends to get rid of this globular stasis, thus favoring the general circulation.

In my Text-book of Practical Therapeutics, the first edition of which appeared about five years ago, I said in regard to this effect of cold on the circulation: "On entering the water he (the patient) shivers, thinks it almost unbearably cold, his teeth chatter, and he gasps if the cold suddenly touches the belly-wall or any exposed surface. In a moment, however, reaction sets in, and the extremities, heretofore blue, trembling, and covered with cutis anserina, become warmer and flushed. The pulse is increased in force and frequency, and the respirations are deeper and more thoroughly performed. As a result

of this, each portion of the body receives a more perfect supply of blood and feels rejuvenated. Following this stage of exhilaration a third comes on in which the blueness and depression of the first stage recur in an exaggerated degree, but this condition does not ensue unless the person remains too long in the water. If he leaves the bath while in the acme of his exhilaration, the stimulus may remain with him throughout the rest of the day."

The reason for the occurrence of this train of symptoms, is not far to seek. The chilliness of the first stage shows that the great abstraction of heat is lowering the bodily temperature, the centres for calorification in the body not manufacturing all the heat that is needed for the preservation of the normal temperature. At first the cold drives the blood hurrying into the warm recesses of the body, leaving the surface cold; but in a few moments the system is aroused to the recognition of the fact that it must increase its exertions in the propulsion of blood and the manufacture of heat, and so with an effort it puts forth all its power, picks up each corpuscle that is hiding from the cold in the internal organs, and, after imbuing it with warmth obtained by increased heat-production in the sources of heat-manufacture, forces it out to the surface of the body along with its fellows, which are driven to all parts of the system. This is not a mere figurative way of putting the matter, for cold always contracts blood-vessels and reflexly stimulates the vital centres to increased activity.

The cold bath, therefore, has a physiological action far more important than the withdrawal of heat, this being a minor and side issue, and it really puts the system in the best trim to resist disease. Only when used for a protracted period of time in such a way that it abstracts more heat than the body can make, does it really reduce the temperature of the entire body.

My views in regard to these questions may therefore be summed up as follows:

First: Moderate fever has been proved to be in itself harmless. Hyperpyrexia is of itself harmful.

Second: Moderate fever has a useful function to perform in the body in the presence of an infection.

Third: Cold baths do good, not by the mere abstraction of heat, but by increasing metabolism and the rapidity of all vital processes.

Fourth: The use of antipyretic drugs is contra-indicated in all infectious diseases. Five years ago, when their use was far more popular than it is to-day, and before we knew as much of their effects and the development of immunity by antitoxin, I said in an essay on "Fever and Antiseptics" to which was awarded the Boylston Prize of Harvard University:

"While it is true that antipyrin may be employed in any disease associated with high temperature, such as typhoid fever, pneumonia, or erysipelas, it must not be forgotten that but one object is gained by its use. Antipyrin, even though its influence may be most favorable in a given case, still accomplishes nothing in the way of cure. Antipyrin only governs the heat processes while the disease plows its way onward to recovery or death; although it may, by quieting restlessness due to the fever or to the nervous disorder produced by the disease, render the pathway to recovery more easy, but no shorter than if it were not employed.

"Many physicians have looked and still look upon antipyretic treatment as curative in its effects, but nothing can be more distant from the truth. It should be distinctly understood and taught everywhere that these drugs belong to a peculiar class; a class of drugs to which we gladly turn when told 'to treat the symptoms as they arise;' a class of drugs which are to be used solely for the relief of the symptoms, and not for the cure of the disease."

These views I still hold, and I think that those best qualified to judge will give them their endorsement.

CHLOROSAL IN THE TREATMENT OF DIARRHEA.

The *Revue Illustree de Polytechnique Médicale* for October 31 remarks that this is the name of a new drug which is a salicylic derivative of chlorophenol. Two isomeric combinations are known, orthochlorosalol and parachlorosalol. These are crystalline substances, white, insoluble in water, and soluble in alcohol and ether. The former has a rather strong odor, while the latter is tasteless and odorless. Girard administers it with success in amounts of from thirty to sixty grains a day in catarrhal affections of the urinary tract and in cases of diarrhea. It may also be used to powder certain kinds of wounds, as it has the advantage of not producing any local irritation.—*New York Medical Journal*, Dec. 14, 1895.

The Therapeutic Gazette

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The Editor is glad to announce that arrangements have been completed and are now in effect which will provide the Correspondence Columns of the GAZETTE with interesting foreign letters from the great medical centres. The gentlemen who have consented to keep the readers of the GAZETTE posted as to medical matters in London, Paris, Manchester, Berlin, Vienna, Edinburgh, and other cities, are well known as able contributors to current medical literature, and occupy positions in the profession which put them in touch with the facts which are most interesting to their professional brethren in America and elsewhere.

By this means, added to the Original Articles, the Editorials, the Notes on Therapeutic Progress, the Reviews, and the Notes and Queries, subscribers to the THERAPEUTIC GAZETTE have the latest and best medical information brought before them every month in a form suitable for practical application.

THE TREATMENT OF GALL-STONES.

In the January issue of the THERAPEUTIC GAZETTE we spoke of the treatment of gall-stones from the standpoint of preventive medicine, and it may not be out of place to consider in this number the treatment of the patient suffering acutely from their presence. Before doing so, however, it is well to remember that the pain felt in the right hypochondrium may be due to the presence of a renal and not an hepatic calculus, and that the distribution and character of the pain may in some instances so closely resemble hepatic trouble as to cause a faulty diagnosis. Again, it is well to preface a consideration of the treatment of gall-stone colic by the recollection that the opening of the common duct into the intestine is guarded by a sphincter-like arrangement which prevents the ingress of the intestinal contents, and, in the case of a stone being passed, tends to prevent its slipping out into the bowel. Again, it is not to be forgotten that there is usually present not only a markedly catarrhal state of the biliary mucous membrane, but often patches of ulceration, from which general infection or perforation may ensue. Finally, the presence of severe pain and tympanites following upon the constipation, so often present in these cases, renders any movement of the bowel difficult or impossible.

The therapeutic indications are, therefore: the relaxation of the sphincter which is in spasm and guards the opening through which the stone must pass; to aid in the expulsion of the stone by the removal of mucus and the congestion in the inflamed mucous membrane; and to relieve tympanites and constipation, not to speak of the pain.

We have already urged elsewhere the free use of spirit of chloroform for the relief of abdominal pain and for relaxing muscular fibres which may be gripping the stone, and we wish to emphasize the importance of this use of this preparation by pointing out that it tends to stop vomiting, relieves tympanites, and acts as an intestinal antiseptic. Along with the chloroform spirit may be given full doses of tincture of belladonna by the mouth, or atropine hypodermically, and the patient should be placed in as hot a bath as he can stand until a large injection has been prepared for the purpose of washing out the rectum and colon. The question as to whether morphine should be used, hypodermically or by the mouth, in such cases, will, we think, be usually answered in the affirmative by the practitioner of experience, on the ground that it is necessary for the relief of the excessive pain and for the purpose of relaxing spasm. On the other hand, it has been pointed out by experienced physicians that very full

doses of morphine may cause such complete relaxation that, while the pain is removed, the stone is not expelled, but remains *in situ*, ready to cause ulceration, obstruction, and another attack of colic. Moderate doses of opium or morphine are, therefore, to be counseled. Indeed, it is asserted that it is only to be given when the patient is exhausted, and if used then, to be given in large enough single dose to be unfailingly effective. Probably the best plan for relieving the pain is to use chloroform or ether by inhalation to the point of primary anesthesia, or, in other words, just enough to take the edge off the pain without stopping the expulsive efforts,—a process daily resorted to in cases of parturition.

The question as to whether emetics are to be used in these cases, in order to aid in producing muscular relaxation which will result in the release of the stone, is to be answered in the negative, since the vomiting may cause rupture of the gall-bladder if this viscus is distended by stones or bile.

The sudden relief of pain points to the escape of the stone into the intestine, and a dose of castor oil should be given at once to sweep it out for examination. If the pain gradually declines, it points rather to a subsidence of effort without expulsion, and as soon as the patient recovers the question of operative interference is to be seriously considered, particularly if the attacks have been frequent and the patient's health is suffering.

That the question of operation for gall-stone is not as serious as many suppose, is shown by the fact that about ninety-five per cent. of cholecystotomies for gall-stone recover; Mayo Robson states that in his hands it is even better than this, for of forty-four cases all got well. On the other hand, the operation is undeniably a difficult one, may be followed by more or less general peritoneal inflammation, and is often found to be more hazardous than at first supposed by reason of the presence of large inflammatory exudates due to chronic inflammation about the gall-bladder or ducts.

In conclusion, it may not be out of place to append Mr. Robson's conclusions as to the indications for surgical interference in gall-stone troubles, as they appeared in the *Clinical Journal:*

1. Repeated attacks of biliary colic which, not yielding to medical treatment, are wearing out the patient's strength.

2. Suppuration in the neighborhood of the gall-bladder, as in empyema of the gall-bladder, or in abscess of the liver, associated with gall-stones.

3. Dropsy of the gall-bladder.

4. Obstructive jaundice where there is reason to think that the common duct is occluded by gall-stones.

5. Acute peritonitis starting in the region of the gall-bladder, where the previous history of the patient is suggestive of gall-stones.

6. Intestinal obstruction due to occlusion by a large biliary concretion.

THE USE OF OXYGEN GAS DURING SURGICAL ANESTHESIA.

The two conditions which, while not alarming, are, nevertheless, annoying to the surgeon, which ensue when ether is administered as an anesthetic, are cyanosis and nausea, and vomiting when the patient regains consciousness. In some instances this nausea and vomiting are so intense as to cause the patient far more suffering and physical injury than the operation itself, and any therapeutic method which can put aside this disagreeable concomitant or after-symptom will be highly valued by practical physicians. While the administration of oxygen during or after anesthesia produced by ether and chloroform is by no means a new therapeutic invention, it has recently been prominently brought forward, first, by the interesting correspondence of Dr. Theophilus Parvin, in which he has described his experiences during a visit to Landau's clinic; and, second, by the paper of Dr. C. B. Cole in the *New York Medical Record* of October 12, 1895. Dr. Parvin tells us, in a personal interview, that the practical results following the administration of oxygen gas in the convalescence from operations was to him most impressive of its value; that the patients recovered consciousness more speedily than under ordinary circumstances, and that to many if not all of them subsequent nausea and vomiting were unknown. In the paper of Dr. Cole, which he publishes as somewhat of a preliminary communication, an interesting account is given of several cases in which the administration of oxygen and ether in the mask acted exceedingly well in preventing the cyanosis and interference with respiration so frequently seen during anesthetization. We can, therefore, bring the matter before the readers of the GAZETTE with some confidence that the advantages which would theoretically follow the administration of this

gas during anesthesia are found to be present in practical experience, and the harmlessness of the method, combined with its efficiency, seems to us to recommend it highly to those who have the best opportunities for testing its value.

THE ERUPTIONS PRODUCED BY DRUGS.

Although every dermatologist recognizes the frequency with which various forms of skin-eruptions appear after the administration of many medicines, it is probably true that the average practitioner does not pay sufficient attention to this possibility, and is therefore misled in some cases into making a diagnosis of one of the exanthemata or of deciding that the eruption is a typical disease of the skin. It is impossible, in the short space which can be devoted to a leading article, to go over in detail all of the drugs capable of producing such untoward effects. On considering the most prominent of them, it can be laid down as a safe rule that a diagnosis of a skin-disease ought never to be made with positiveness until the possibility of the lesion being produced by a drug has been entirely put aside. Only recently one of the most prominent dermatologists in this country said to the writer that it was surprising how many cases were sent to him by physicians who were not specialists in diseases of the skin, on the supposition that the individual was suffering from some true skin-disease, when, in reality, the withdrawal of the medicine which the patient was taking for some other complaint was speedily followed by complete recovery. Of all the drugs which may produce lesions in the skin which closely resemble forms of true skin-disease, iodide of potassium ranks first. Urticarial wheals, bullous- eruptions, and even eczematous catches may follow its administration, while in other cases an intense pruritus develops, which is thought to be due, perhaps, to the gout from which the patient is suffering rather than to the drug. Singularly enough, quinine is another drug which produces eruptions more frequently than is generally recognized, perhaps the most common form of eruption being urticaria, or in its place an intense erythema. The eruption of quinine and belladonna may so closely resemble that of scarlet fever as to make a diagnosis between the two conditions very difficult, particularly as the belladonna is very apt to cause a slight rise of temperature. Antipyrin may also produce such a rash, though it more commonly resembles the eruption of measles; and salicylic acid may, as may also iodide of potassium, cause localized edema; while arsenic causes pigmentation of the skin. The subsequent course of the case, and the fact that these eruptions are generally uncomplicated by other symptoms, will do much towards enabling the physician to guard himself against deception, provided he will but remember the possibility of skin-changes under the use of remedies.

TREATMENT OF SURGICAL TUBERCULOSIS BY MEANS OF IODOFORM INJECTIONS.

Since Mikulicz prominently brought before the profession the anti-tubercular action of iodoform when brought in direct contact with diseased foci, the literature of surgery has furnished countless reports corroborating the findings of this surgeon and showing results so satisfactory that in recent years the percentage of arthrectomies, of excisions and of formal major operations undertaken for the relief of surgical tuberculosis in bones and joints has markedly diminished.

The iodoform treatment—that is, local injections of iodoform-containing fluids into tuberculous tissues—has in the main been used only in exceptional cases, and not as a protracted routine treatment. Indeed, the majority of all reports are open to the objection that a sufficient number of cases has not been observed by individual operators, or that the treatment has not been continued through a sufficiently long time, or, still more important, that the ultimate results are not recorded.

Wieland's records of the results obtained in the Children's Hospital at Basle are, therefore, of more than usual value, since he has been employing this treatment as his routine method since 1891, has observed many of the patients for a number of years, and in a fair percentage of his cases is able to report the ultimate results (*Deutsche Zeitschrift für Chirurgie*, bd. xli, heft 4 and 5). During this time there were thus treated twenty-one cases of cold abscess, including many psoas abscesses; of these, sixteen were definitely healed, four were improved, and one showed no improvement. Of twelve cases of joint tuberculosis treated by iodoform injections, nine were cured and three were improved. Of twenty-eight cases of surgical tuberculosis first treated operatively—*i. e.*, by incision and curetting —and afterwards by iodoform injections,

twenty-five were cured, two improved, and one died; of these last cases, together with affections of the larger joints, four were para-articular abscesses, six diseases of the ankle, eight spina-ventosa, and ten multiple localized tuberculosis. The total number treated by iodoform injections was seventy, of which fifty four (that is, seventy-seven per cent.) were discharged as improved or cured; the subsequent history of thirty-eight of these was obtained—thirty-four having been discharged as cured, and four as improved; of the thirty-four cured cases, twenty-six remained definitely well, two suffered from local recurrence, five died of tuberculous disease developing in other parts of the body, one died of an unknown affection; in three of the four cases discharged as improved there was local recurrence within a year.

These results, especially when compared with those commonly accepted as satisfactory before the inauguration of iodoform treatment, are certainly encouraging.

The functional results of cure were best shown in the cases of psoas abscess following spondylitis. Pain, contractures and limping vanished entirely, and the vertebral caries appeared to be checked. This latter effect was probably not entirely due to the iodoform treatment, since, together with this, the customary orthopedic appliances were used—that is, apparatus was applied by means of which extension and fixation were secured.

The functional results of the treatment of joint tuberculosis were not so satisfactory, though they compared well with those obtained by more radical procedures.

Wieland prefers an injection of ten-per-cent. iodoform emulsion in glycerin, both ingredients being thoroughly sterile. In the case of cold abscess the needle of the aspirator was driven in, the contents of the abscess evacuated, the sac thoroughly washed out with a four-per-cent. boric-acid solution, and from half an ounce to an ounce of the iodoform emulsion injected in. In case the abscess filled, this operation was repeated. Even if after a third or fourth puncture and injection the abscess filled, the treatment was continued. After this treatment the parts must be kept absolutely at rest, and over the abscess should be placed a pressure bandage, preferably of flannel. If the puncture is treated with antiseptic precautions, the formation of a fistula is not to be feared. The avoidance of this requires that the first dressing should not be left in place too long. Mixed infection makes the ultimate cure decidedly more difficult.

When after repeated punctures and injections the abscesses refused to heal, they were opened, curetted, treated with iodoform emulsion, and closed. In cases of joint tuberculosis without abscess, intra-articular injections of iodoform were made. Where there was caries of bone or joint, with fistula-formation, the conditions commonly present in hospital cases, necrotic tissues were removed by partial resections or curettings, after which the iodoform treatment was instituted, the injections being driven either directly into the granulating wound, into fistulæ, or into surrounding tissues. In the severe cases of tuberculosis of the ankle and wrist, with multiple fistulæ, the results from the iodoform treatment were often surprisingly satisfactory.

As to the toxic effects, there is often, following the injection, a sudden elevation of temperature lasting one or two days, with hurried heart-action and sometimes profound systemic depression, headache, and vomiting. Occasionally children show urticarial eruption. If the fever lasts more than two or three days, the patient becomes profoundly depressed and is often delirious. Exceptionally, marked symptoms of intoxication develop,—one such case is reported by Wieland, the pulse reaching 180, and delirium supervening, with suppression of urine. In four cases there was marked irritation of the kidneys, apparently not dependent upon the amount of iodoform employed; in two of these there seemed to be a development of acute primary nephritis, in the other two an exacerbation of the old disease.

Wieland states that as a result of his conservative treatment of surgical tuberculosis he is convinced that iodoform therapy, aided by orthopedic appliances and by minor operative procedures and careful attention to the general systemic condition of the patient, gives good results in children. This is particularly important, since the major operative procedures at this period of life are nearly always followed by great disability.

The disadvantage incident to iodoform lies in the length of time required for treatment, many of the cases lasting for years.

Wieland's paper is reinforced by careful case reports. Perhaps its special function and one of main importance is to call attention to the fact that the iodoform treatment of surgical tuberculosis requires more time and patience and as much skill and care a

are necessary in the performance and after-treatment of radical operations.

Incidentally he has shown also that the danger of iodoform intoxication, even when emulsions in place of solutions are employed, is a real one; hence the necessity for very moderate doses in the beginning of the treatment, and careful observations of the urine.

Careful reports such as this, giving full details of cases, ultimate results, and accidents occurring during the course of treatment, will enable the profession to gauge a given method of treatment at its full value.

Reports on Therapeutic Progress

THE LOCAL TREATMENT OF PRURITUS ANI.

In the *Philadelphia Polyclinic* of December 14, 1895, ADLER tells us that the pruritus induced by uterine catarrh can only be permanently removed by the cure of the prime factor in its causation. Relief from the itching can be afforded by cleanliness, frequent washing of the parts, and vaginal douches. Various sedative applications may be tried, such as one part of the official solution of plumbic subacetate to four parts of water, applied three or four times daily by means of cotton pledgets; or a lotion composed of one ounce each of chloroform, tincture of aconite, and tincture of opium, and six ounces of olive oil, the mixture to be shaken well before using, and smeared over the parts whenever the pruritus becomes annoying.

The destruction of worms, and the relief of any cutaneous inflammation about the anus which their presence has occasioned, will materially assist in the relief of the pruritus. Rectal medication—such as enemata of lime-water, weak solutions of quinine (20 grains to the pint of water) or of corrosive sublimate (1 to 4000)—only destroys the parasites in the rectum; for their complete eradication it is essential to reach the seat of their propagation in the small intestine. The best drugs for this purpose are moderate doses of santonin, aloes, or asafetida, alternated every other day with Hunyadi water, or, in the case of children, with solution of magnesium citrate. Reinfection is especially liable to occur in children, from the habit of biting the nails after scratching the anus. In this manner the parasites or their ova are carried into the mouth and become a nucleus for a fresh lot of thread-worms.

When pruritus is caused by animal or vegetable parasites, it is readily cured by the application of sulphur ointment, gently rubbed over the affected area at bed-time. The ointment should contain from half a drachm to a drachm of sulphur to the ounce of benzoated lard, and should be employed every night for a week or ten days. It is a mistake to use too strong a sulphur ointment and to continue its use for weeks, as an irritable condition of the skin is apt to follow.

A cleaner and equally efficient remedy, advised by the Messrs. Allingham, is a lotion of sulphurous acid of the strength of one part to six of water.

The removal of hemorrhoids, polypoid growths, fissure, and fistula, will enable the remedies applied for the relief of pruritus to accomplish their work in cases which would otherwise prove intractable. As a rule, when pruritus ani is established, the treatment of any organ or local condition which caused it will not cure the pruritus. On the other hand, Adler's experience differs from Dr. Mathews' observations in that pruritus has been frequently found to be symptomatic of some other rectal trouble.

The pruritus associated with a varicose condition of the rectal veins may be relieved by measures directed to toning up the parts and lessening any tendency to congestion. Bathing the anus night and morning, and after a movement of the bowels, will often accomplish this purpose. To prove efficacious, a sponge must be soaked in cold water and then squeezed dry by pressing it against the anus fifteen or eighteen times at each sitting. Another excellent treatment, to be applied by the physician, is the following:

Fluid extract hamamelis, 1 fluidounce;
Fluid extract ergot,
Fluid extract hydrastis,
Compound tincture benzoin, of each 2 fluidrachms;
Carbolized olive oil (five per cent. carbolic acid), 1 fluidounce.

Mix. Shake well before using. One to two drachms as a rectal injection.

A small quantity of this should be given to the patient, with directions to smear it over the parts night and morning and after a passage of the bowels.

In pruritus ani, all discoverable local or constitutional causes having been excluded, we are brought in contact with a class of cases, by no means small in number, to which the term "neurotic" has been applied. That the condition is due to a neurosis, reflex or otherwise, Adler is not able, from personal observation, to confirm; but the theory is plausible, and is warmly advocated by Pro-

fessor Mathews. These cases tax the physician's resources to their limit in many instances. What relieves one patient will utterly fail in another, and what gives relief for a time may lose its effect entirely. Furthermore, it is impossible to state, with any degree of precision, as to the form in which to employ our remedies, for, as stated by the Messrs. Allingham, "in cases which appear best suited to ointments the ointment may utterly fail, and a powder, which you feared would be useless, may effect a cure." Therefore they advise their readers "to ring the changes between ointments, lotions, powders, and caustics."

Adler simply cites the following formulas which he has tried and found serviceable, without giving the indications for the use of any:

Mercury oleate, 2 drachms;
Morphine sulphate, 1 grain;
Lanolin, 3 drachms;
Ointment rose-water, ½ ounce.
Mix. Rub over affected area three or four times daily.

Calomel ointment,
Petrolatum (purified), equal parts.
Apply three times daily.

Zinc-oxide ointment, ½ ounce;
Balsam of Peru, 2 drachms;
Rose-water ointment, ½ ounce;
Lanolin, 2 drachms.
Mix. Apply night and morning after bathing parts freely with hot water.

Tar ointment, ½ ounce;
Belladonna ointment, 2 drachms;
Tincture aconite, ½ drachm;
Zinc-oxide ointment, ½ ounce;
Lanolin, 2 drachms;
Rose-water ointment, 4 drachms.
Mix. Apply three times daily.

Chloroform, 1 drachm;
Glycerin,
Tincture aconite, of each ½ drachm;
Lanolin, 2 drachms;
Rose-water ointment, ½ ounce.
Mix. Apply two or three times daily.

Renew prescription every week, as chloroform evaporates quickly.

Camphor, 1 drachm;
Alcohol, a sufficient quantity;
Lanolin, 2 drachms;
Purified petrolatum, 6 drachms.
Mix. Use night and morning.

Carbolic acid, 1 drachm;
Glycerin, 2 drachms;
Purified petrolatum, 5 drachms.
Mix. Apply two or three times daily, after cleansing parts.

Lotions:

Solution of lead subacetate, 1 drachm;
Milk, 1 ounce.
Mix. Prepare fresh daily, and smear over parts several times a day.

Sodium biborate, 1 drachm;
Morphine hydrochlorate, 5 grains;
Dilute hydrocyanic acid,
Glycerin, of each 2 drachms;
Water, 3 ounces.
Mix. Bathe parts three or four times daily.

Mercuric chloride, 4 grains;
Ammonium chloride, 10 grains;
Lime-water, 3 ounces.
Mix. Bathe liberally.

Silver nitrate, 20 to 60 grains;
Distilled water, 1 ounce.
Mix. Paint over parts every second or third day until the skin assumes a healthy condition.

A favorite prescription of Dr. Joseph M. Mathews is:

Menthol, 1 drachm;
Cocaine hydrochlorate, 20 grains;
Alcohol, 1 ounce;
Distilled water, 1 ounce.
Mix. Applied on a cloth frequently to relieve the itching.

Green soap,
Oil of cade,
Alcohol, equal parts.
Mix.

Amongst the various powders may be named: aristol, boric acid, zinc oxide, equal parts of calomel and bismuth, starch, etc.

Finally, the recommendation of the Messrs. Allingham may be employed, to wit: the introduction into the anus, at bedtime, of a bone plug, shaped like the nipple of an infant's feeding-bottle, with a circular shield to prevent its slippling into the bowel. The nipple should be about an inch and a half long and three-fourths of an inch thick. They advise the use of the plug on alternate nights only. By its employment a good night's rest is assured, and the itching is allayed.

THE TREATMENT OF LUPUS BY THE LOCAL APPLICATION OF CREOSOTE.

ZERENINE has obtained remarkable results in the treatment of lupus by the local application of creosote, being originally led to employ this method by the good results which he obtained in the treatment of pulmonary tuberculosis. The creosote is employed pure or mixed with glycerin in the proportion of one to three or one to ten. It is well to saturate a piece of gauze with a solution of creosote and oil, or creosote and glycerin, and to precede its application to the sore by scarification. In one case of lupus which had existed for fifteen years, and which had been treated by curetting without amelioration, the application of this creosote mixture caused a disappearance of the red color, the

movements of the jaw (which had become involved by cicatricial tissue) became more easy, the ulcerated surface improved in appearance, and almost complete cure was produced. In another case, in which a lupous ulcer of the nose had existed for nine months, the ulceration disappeared after a month of treatment, the parts being kept constantly wet with sterilized gauze wet with this solution.

In another case, in which lupus of the nose had returned after scraping, two months of this application of creosote in the proportion of one to three produced a complete cure. Zerenine believes this treatment is less apt to be followed by recidivity than curettage or plastic operation.

In the treatment of chronic suppuration dependent upon tubercular infection this author has also employed these creosote solutions with advantage, particularly in adenitis of the cervical and axillary glands, and in cases of tubercular suppurative osteitis in the foot the treatment proved very useful.—*La Médecine Moderne*, Nov. 30, 1895.

THE TREATMENT OF INCOERCIBLE VOMITING BY FARADIZATION OF THE PNEUMOGASTRIC NERVE.

This by no means new method of treatment of severe vomiting is considered by BONINEFIN in *La France Médicale* of September 20, 1895. He details cases in which severe vomiting was greatly relieved by this method of treatment continued for a period varying from ten to twenty-five minutes, the positive pole being placed over the pneumogastric nerve in the neck and the negative pole over the stomach. He believes that by this means we can not only control vomiting, but during the time faradization is continued food can be given which will be absorbed through the stomach, and thereby the patient will receive nourishment.

THE SUBCUTANEOUS INJECTION OF CAMPHORATED OIL.

SCHILLING, of Nuremburg, has reported the results obtained by him in the subcutaneous injection of camphorated oil in the treatment of infectious diseases, the patient being in a condition of collapse. The trouble with such stimulants as ether and musk, as he points out, is that they are too fleeting in their action, whereas the action of camphor is more prolonged. Schilling injects as much as fifteen to forty-five minims of a ten-per-cent. solution of camphorated oil, and he claims that relief is obtained after the injection of seven grains of camphor and that fifteen grains produces remarkable restorative effects. In one case of infectious endocarditis, with collapse, the author injected as much as thirty grains of camphor in one day, with good results, and in a case of pleuro-pneumonia with meningeal symptoms the injection of fifteen grains did not aggravate the cerebral symptoms—on the contrary, evidences of nervous excitement were markedly ameliorated. He does not think there is any danger of a cumulative action, as the camphor is eliminated by the urine two hours after its injection.—*La Médecine Moderne*, Nov. 30, 1895.

ANTINOSINE AS AN ANTISEPTIC.

Antinosine, a sodium compound containing iodine and phenol, is a blue powder, dissolving easily in water. It is supposed to possess antiseptic properties equal or superior to those of iodoform, and KRUSE tells us that on the *Micrococcus pyogenes* it acts as a powerful antiseptic. It also has a similar influence upon the bacilli of charbon and diphtheria, and arrests the development of nearly all pathogenic microbes. Clinically it has been found to be a useful dressing or pack for cavities. The absence of odor and of toxic properties, as well as lack of any irritant effects, makes it especially useful in affections of the nose, the ear, and the mouth. In cystitis and catarrh of the bladder it has been employed for the purpose of washing out this viscus and has given prompt amelioration, the urine becoming clear and pain disappearing.

LEWIN asserts that he has employed it as a dressing for syphilitic and non-syphilitic chancres, with success. The method of employment is to use a half-per-cent. watery solution as a gargle in the treatment of throat affections or of middle-ear trouble. Somewhat weaker solutions are employed for irrigating the bladder. On external surfaces it may be employed in powder form.—*La Médecine Moderne.*

EUDOXINE IN INTESTINAL CATARRH.

Eudoxine, a bismuth salt containing iodine and phenol, occurs as a brownish-red powder without odor, and is insoluble in water. It is, however, distinguished from the other salts of bismuth by its solubility in caustic

soda solutions, when it gives a blue-violet color.

Clinically it has been found to be of advantage in intestinal catarrh, particularly in those cases in which tuberculosis is present. The dose is fifteen grains three times a day, and it does not produce any secondary effects. In chronic inflammations of the intestine it seems to exercise a thorough curative influence, and it is good in cases of colic with tympanites and dyspepsia and diarrhea, if aided by the patient using a proper diet. The dose for a child of two months is one-half grain three times a day; for a child of four months, one grain; for a child of one year, 1½ grains; for adults as much as one or two grammes may be given.—*Journal de Médecine de Paris*, Nov. 24, 1895.

THE TREATMENT OF DIPHTHERIA.

The antitoxin treatment of diphtheria has so engrossed the attention of the profession that we fear there has been a tendency to rely entirely upon its therapeutic advantages and to ignore the fact that one of the most important directions which the physician can leave in regard to his patient is that which deals with the maintenance of nutrition by means of a proper diet, and the employment of stimulants in order to aid the antitoxin and the vital resistance of the patient in its struggle with the disease. In a very useful article upon the treatment of diphtheria, published in the *Revue de Thérapeutique Médico-Chirurgicale*, October 18, 1895, LYON emphasizes the fact that substantial alimentation should be afforded the patient in the way of milk, light soups and broths made from various kinds of meat, and in the way of stimulants coffee and alcoholic drinks, such as wine and champagne, should be given. He believes the milk is particularly indicated, as facilitating the elimination of toxins from the body. The absolute anorexia which is present in the greater number of patients suffering from diphtheria offers a serious obstacle to forced feeding, and this is increased if intubation or tracheotomy has become necessary; but nevertheless every possible opportunity of getting food, predigested or otherwise, into the patient, should be taken advantage of. Lyon believes that intestinal antisepsis is important, and he therefore administers cachets or capsules containing minute doses of creosote, which he believes also have a favorable influence upon the pulmonary mucous membrane. Iron (in the form of the perchloride) and quinine are also useful. If the patient is a young child, he is apt to prescribe the following:

℞ Quinine hydrochlorate, 1 drachm;
Syrup, 1 ounce;
Cognac, ½ ounce;
Infusion of coffee, 3 ounces.

Of this a teaspoonful may be given several times a day.

Should myocarditis develop in the course of the disease, Lyon depends largely upon subcutaneous injections of caffeine; should broncho-pneumonia develop, he utilizes inhalations of oxygen and insists upon the administration of alcoholic stimulants; while if collapse is threatened, a hot bath is also of value; but he believes that the application of counter-irritation over the throat is useless. The attack of diphtheria having once passed by, he employs the interrupted electrical current for the relief of paralysis, and active friction to bring blood to the paralyzed part, with salt baths and massage.

ANTIPYRIN IN THE TREATMENT OF CHILDREN.

In *La France Médicale*, September 6, 1895, COMBY gives the results of his employment of antipyrin in infantile diseases. He finds that small doses, varying from two to three grains, are valuable in the treatment of chorea, and that if the child is as old as six, eight, or ten years, even fifteen or thirty grains or more may be given without danger. Usually however, he finds that five to fifteen grains a day is sufficient to produce marked sedative effects. So confident is he of the harmlessness of antipyrin in diseases of children that he would not be afraid to administer very much larger quantities than this, and if he finds the child possesses no particular susceptibility he frequently begins with as large a dose as fifteen grains a day and increases this up to as much as sixty grains a day. He believes that only by the employment of these large doses can we get good results in severe chorea. In whooping-cough he often finds it necessary to give similarly large doses. In neuralgia he thinks it of great value, particularly about the period of puberty, and in the fevers of childhood he also regards it as a valuable remedy. His method of administration is as follows:

℞ Caffeine, 75 grains;
Antipyrin, 2½ drachms;
Simple syrup, 12 ounces.

A teaspoonful two or three times a day according to the age of the child.

Or he uses:

℞ Caffeine, 15 grains;
Antipyrin, 15 grains;
Distilled water, 150 minims.

Employing this solution for hypodermic injection in divided doses. [This is a very painful injection.—ED.]

Comby is particularly enthusiastic in regard to the employment of antipyrin in the fevers of childhood. He regards it as absolutely safe and yet effective. In the treatment of the diarrhea of early infancy he also believes it is of value, owing to its antiseptic influence in the intestine.

He concludes his paper by stating that antipyrin is a useful medicament, well borne by children at all ages; that it has very slight toxic properties and can be given in safety in large doses; that when given in these doses it may in certain cases produce a fugaceous erythema, but does not produce disturbances of the stomach nor cause irritation of the kidneys. He gives, according to age, anywhere from three to fifteen grains of the drug at a time, and repeats this dose from two to six times a day, and has continued to do so for weeks without disadvantage. He even goes so far as to state that in chorea antipyrin is an infallible remedy.

[Personally, the editor of this journal regards these doses as distinctly dangerous, and records them chiefly to show what large doses have been given without producing dangerous symptoms in Comby's hands.]

THE TREATMENT OF ACUTE ARTICULAR RHEUMATISM.

In *L'Union Médicale* of November 2, 1895, is an article on this subject of considerable interest. The author considers that salicylate of sodium is practically a specific, and recalls the fact that Dujardin-Beaumetz was in the habit of administering every two hours very large doses of the drug, preferring massive doses to its fractional administration, and believing that it was best given in syrup diluted with a copious drink taken at the same time. The most favorable time for the administration of these large doses of the salicylates is at night, as by this means the inconvenient concomitant effects (such as ringing in the ears, and the sweats) are largely escaped by the patient going to sleep. The dose is to be repeated every twenty-four hours, being given twice with an hour interval. Usually the desired effects are obtained after as much as 60 to 120 grains are given. The author does not consider that the presence of endocarditis or pericarditis contra-indicates the employment of these large doses; the only contra-indications are the untoward effects which are commonly seen in connection with the ears and skin. A general contra-indication, however, in acute articular rheumatism, is inactivity of the kidneys, particularly in pregnancy and in those cases in which the rheumatism is accompanied by albuminuria.

Mention is made of the fact that Weiss has highly recommended the method of Bourget of using salicylic acid in an ointment about the inflamed joints. This ointment generally consists of salicylic acid, lanolin, and turpentine, of each 2½ drachms, and lard 3 ounces. This is placed about the joint and rubbed in as vigorously as the pain will allow, and the part is then bandaged with flannel. If for any reason salicylate of sodium or salicylic acid cannot be employed, it is recommended that pills composed as follows shall be administered:

℞ Salophen, 2 grains;
Extract of gentian, ½ grain;
Liquorice powder, sufficient to make one pill.

Five of these pills are to be given in the morning and five at night.

Attention is again called to the fact that the greatest care must be used in the administration of salicylic acid to pregnant women and in albuminuria, and it is thought best under these circumstances to substitute antipyrin for it, particularly if the pain is severe. Mention is made of exalgine, but it does not receive very favorable consideration. Hot baths are sometimes of value if the patient is strong enough to stand them; they nearly always bring relief of pain and cause sleep, but on the other hand they may produce exhausting sweats.

EARLY TREATMENT OF PENETRATING WOUNDS OF THE EYE.

BRYANT, in Wilkinson's *Omaha Clinic* for November, 1895, tells us that there are some general rules that can be laid down in the treatment of these cases that will be proper for all, while special rules will be called for in others, depending upon the location and depth of the injury.

Rules which will apply to the majority of cases are the following:

Careful cleansing of the injured parts and of the palpebral sac with some aseptic or antiseptic solution, as the case may seem to require. Boiled water, with or without the

addition of boric acid or the bichloride of mercury, will fulfill these requirements.

Loose ends or fragments of cornea should be removed and the lips of the wound brought into as nice apposition as possible.

If the iris protrudes through the wound and is uninjured, after being thoroughly cleansed it should be carefully replaced in the anterior chamber with probe or spatula, if this be found possible, and if not the protruding portions should be removed.

If the prolapsed iris is lacerated, it should be snipped off with scissors at once. If the wound is in the central portion of the cornea, atropia sulphate in solution of two or four grains to the ounce (according to the age of patient) should be used with sufficient frequency to produce wide dilatation of the pupil within a few hours' time, so as to remove the iris from the location of the wound and thus prevent a recurrence of the prolapse. The atropia not only does this, but is the best remedy known to prevent and control an inflammation of the iris itself which may follow the accident whether the iris is injured or not.

If the wound is near the periphery of the cornea, a solution of eserine or pilocarpine should be used to contract the pupil, rendering the iris so tense that it does not bulge and protrude through the wound.

After the first twenty-eight hours, or as soon as the edges of the wound adhere, it will be well to change the myotic to a mydriatic to prevent, in so far as possible, an iritis.

Should the lens or deeper structures be injured, the same treatment should be followed, to put the case in the most favorable condition for the further treatment which it will require.

After the cleansing of the wound and palpebral sac and replacing or removal of prolapsed iris, a pressure bandage should be applied. This will answer the double purpose of giving support and rest to the injured parts. A bandage of gauze over a light pad of cotton fulfills the indications here and does not make the hot dressing that some of the heavier bandages do.

Cold applications are indicated in all of these cases except the milder ones, and are best applied over the light dressing just described.

In private and hospital practice Bryant gets the best results, with the least discomfort to the patient, by using broken ice in a small ice-bag which can be kept applied over the bandage the greater part of the time. In this way the cold without the moisture is secured, which is much better for the injury itself and not so disagreeable or uncomfortable to the patient.

Pain should be relieved, and rest and sleep procured, by the use of morphia, if necessary, as these conditions are as essential here for the prevention of inflammation and the hastening of the reparative process as in wounds of other parts of the body.

Briefly, then, the early treatment of perforating wounds of the eye can be summed up as follows: in the careful cleansing of the parts, the replacing or removing of the prolapsed iris, the use of the bandages and application of cold, the use of morphia to relieve pain and procure rest, and the free use of atropia to produce complete dilatation of the pupil.

The last remedy he finds more frequently neglected than all others, or, if not actually neglected, used in so weak a solution or with so little frequency as to produce no apparent effect. This is probably due to the teaching in some of our text-books, the authors of which dilate upon the danger of its use, such as glaucoma and systemic poisoning, until men in general practice are afraid to use the drug in sufficient strength and with sufficient frequency to get any good effect from it. The dangers in the use of atropia are so slight as to only be remembered as possibilities in the treatment of these injuries. The safest rule to follow in the use of this drug is for the physician himself to instill a few drops of the solution in the eye, and repeat every fifteen or twenty minutes, until the desired effect has been obtained, when it will be found that a few drops three or four hours apart will maintain the effect.

SPORADIC GOITRE.

In a paper of considerable length in the *Lancet* of November 9, 1895, GORDON HOLMES tells us that in a London throat clinic goitre is met with in three sharply defined manifestations.

1. Tumors variable in size, but never very large, variable also in consistency, and apparently of purely local significance. The swelling is not usually remarkable for its symmetrical outline: it may extend across the whole front of the neck, or exist only on one side or in the middle. When the whole thyroid gland is involved, one lobe may be implicated much less than the other; the isthmus may be the chief seat of enlarge-

ment or may appear as a well defined depression between two lateral eminences. As a rule, the goitre is firm but compressible and more or less movable on the neck. In a minority of cases, however, it is remarkably dense. Some hard goitres have a very regular surface, whilst others are more or less irregular and may even give the impression of a rather rough stone wrapped in a covering of integument.

2. The second class of goitres is comparatively rare; it resembles the first class in seeming to be a purely local manifestation, but the tumor differs considerably as to shape and density. Regularity of outline, smoothness of surface, and concentricity are the rule. Occasionally, however, two or more swellings, conjoined to a greater or lesser extent, are met with. To palpation these goitres give a tolerably clear impression of containing fluid, and are, in fact, cysts.

3. In this division are to be reckoned a number of thyroid tumors, as a rule soft and puffy, and also diffuse and symmetrical, which generally commence in young people between the ages of fifteen and twenty years. They differ from the two first classes in being allied, in a great majority of instances, to one or more of certain other symptoms—viz., nervous exaltation, neurasthenia, cardiac excitement, anemia, and less frequently protrusion of the eyeballs (exophthalmos). Some of these, however, are probably merely examples belonging to the two former varieties in an initial stage. In the most pronounced cases the action of the heart is very tumultuous and the pulse may attain 140 or 150 beats per minute. Under these circumstances throbbing of the carotids may be so great as to produce a visible rhythmic movement of the goitre and to communicate a considerable systolic jerk to the hand if placed on the tumor. A murmur may be heard with a stethoscope. Whether there is a pulsating expansile movement in the substance of the swelling, is a doubtful point. Looking to the great vascularity of the thyroid body, which receives more blood than the brain, it might well be so, especially if the vessels were dilated or multiplied in proportion to the mass of the goitre. Another peculiarity of this kind of bronchocele is that a variation in size, perhaps at different periods of the same day, is liable to occur. It may happen that the tumor as a regular occurrence is larger in the evening, or the increase may be only occasional, concomitantly with indisposition, mental excitement, or the catamenial flow. As to the exophthalmos, it may be so slight as almost to escape notice, or it may proceed to such an extent that the strain on the envelopes of the eye produces ulceration of the cornea; this, however, is rare, and the writer has not met with such a case. The patients when seen by the practitioner are generally in a very nervous condition, sometimes scarcely able to speak intelligibly, from muscular tremor and paresis. Tremor and drooping of the eyelids are often noticeable. Anemia is not constantly present, and occasionally the patient seems to be rather plethoric than otherwise. The evolution of symptoms in Graves' disease seems to take the following order: neurosis, cardiac excitement, goitre, and exophthalmos. But the thyroid gland may, of course, be in a morbid condition before its hypertrophy becomes apparent.

In ordinary cases of goitre, such as given above in the first class, excision of the tumor has been a favorite operation with German surgeons, notably Lucke, Billroth, and Kocher. During the recent Surgical Congress at Berlin the last-named presented his list of such operations completed to the number of 1000. Generally speaking, however, this means of radical cure has rather declined of late years, owing to the discovery of myxedema. This affection was independently noticed by Kocher in the form of "cachexia strumipriva," the term he applied to a train of symptoms observed by him to follow frequently on the total removal of a goitre. Tetany also very commonly occurs after complete excision. The difficulty is now met by leaving a small portion of the gland to fulfill the functions of the organ. Out of the 1000 cases of excision Kocher has put on record, only twelve per cent. of deaths resulted from the operation.

A brief allusion will here suffice to the method of treatment employed extensively in India by a Captain Cunningham, and said to have been successful in some scores of thousands of cases. We allude to applying an ointment of biniodide of mercury to the surface of the goitre, and then causing the patient to keep the part exposed to the glare of the sun for an hour or several hours until blistering occurs; then the ointment may be reapplied and the case left alone for twelve months, when, if the cure is not complete, the measure can be repeated. This treatment doubtless falls in easily with the habits of natives of the tropics, but it has failed here, owing probably to its being less consonant with the routine or perhaps the solar opportunities of European life.

We now come to the means of treating goitre introduced about a quarter of a century ago by Alfred Luton, of Rheims—viz., the injection of iodine into the substance of the tumor. This is undoubtedly the greatest advance ever made for the relief of bronchocele. Compared with excision the procedure is without risk, either with respect to life or myxedema, whilst in suitable cases the result is almost as certain as in the grave operation. It must be borne in mind, however, that very hard goitres will not yield to this treatment—the success of the injections is, in fact, precisely in an inverse ratio to the amount of induration. Thus, in some instances only a slight diminution of the swelling can be attained, but in a majority absorption will proceed until practically nothing is left of the tumor. The writer has found that in ordinary cases (when the goitre is, let us say, somewhat less in size than the average fist) an injection of about twenty minims of tincture of iodine once a week produces the maximum of reducive effect. Frequent injections are not, however, necessary to recovery, as the contractile result of a single operation does not die out altogether until a month or more has elapsed. Occasional injections may, therefore, be quite as successful as regular hebdomadal ones; but of course the time occupied will be proportionately longer. The slower treatment is advisable in the case of nervous and delicate patients, as the first effect of an injection is to produce some parenchymatous swelling and inflammation, which for two or three days is often accompanied by rather severe pain about the neck. Hence weakly persons soon begin to dread the little operation. In such cases it is well on each occasion to freeze the surface with ether spray at the point chosen for inserting the needle. How the injection acts is not quite certain; but it seems that the point of lodgment forms a focus from which the substance of the gland becomes devitalized in a diminishing degree throughout a considerable area. Consequently, an active absorption of débris is set up, stimulated by the inflammation, the iodine, or both. The specific part played by the iodine is, however, a minor one, as good results can be obtained by the similar use of other fluids, such as solution of perchloride of iron, alcohol, dilute acetic acid, etc. As to the mode of procedure, the point of the needle should first be steadied on the spot selected for entry; then, by a quick movement, the needle is driven straight in for half an inch, or more, according to the size of the goitre. Practicing the insertion rapidly in this way, the stab is so little felt that an ordinary patient will scarcely wince. When carelessly done the needle may carry the skin over the smooth surface of the goitre and enter at an acute angle, being itself bent or broken in the process. It is advisable that the needles for these injections should be stouter than those furnished for ordinary hypodermic use in which it is only necessary to penetrate to the subcutaneous tissue. Unless the tumor is distinctly bi-lobed or extends across the whole front of the neck, it makes not much difference whether the injections are made always at the same spot or in various places. In the smaller goitres the needles must be directed from the point of entry towards the centre, and thus the site of lodgment will be always practically the same. The effect of the injections is, however, somewhat widespread, and even when the whole mass of the thyroid gland is involved the swelling may be observed to diminish on one side while the treatment is confined to the other side.

As to very large goitres—the size of the head or thereabouts—he has only seen one such, and in that the injections were unsuccessful, although the tumor was rather soft and appeared to consist of a number of fibro-cysts, each being somewhat larger than a walnut. Such developments are undoubtedly very rare in sporadic instances.

The treatment of bronchocele by the internal administration of drugs has been very extensively attempted, but the results are only occasionally satisfactory. Iodide of potassium has, of course, been generally the sheet-anchor, but hydriodic acid and hydrofluoric acid have, for a time at least, been strongly advocated. At the German congress above mentioned Kocher spoke very highly of thyroid gland and phosphate of potassium used conjointly, and such a recommendation coming from a surgeon so habituated to the use of the knife in these cases should certainly carry great weight.

2. In cystic goitres the indications for treatment are simple and after the old-established measures adopted for the radical cure of hydrocele—tap the cyst and inject some fluid capable of setting up an inflammatory process by which the secreting membrane lining the cavity may be destroyed. Thus the tumor is entered about its lower third by a medium-sized trocar and cannula, care being taken to avoid any vein which may appear near the surface. When the contents are evacuat

two or three drachms of solution of perchloride of iron (two drachms to the ounce) are injected through the cannula, which is stopped with a plug and allowed to remain in, its retention being ensured by some suitable fixing. The discharge-pipe of the syringe used should be bent at an obtuse angle, so that the body of the syringe is held somewhat upright when injecting. This form was adopted by Mackenzie after he had had a death from injecting air into a vein, in order to ensure that no bubble of air should remain in the liquid injected. After two or three days the plug is removed, when, in the most favorable cases, the discharge will be found scanty, mixed with some pus, and perhaps a little blood. The plug is reinserted and removed daily or on alternate days for two or three weeks until the discharge diminishes to a small amount of purulent liquid. Finally the cannula is withdrawn, and the opening is afterwards kept open by any simple device, such as keeping a piece of thin wax bougie strapped into it with plaster, until the discharge ceases and the cyst is evidently obliterated. Sometimes it happens that the goitre very rapidly refills and there is little evidence of the interior irritation which should result from the injection. The latter must then be repeated. In the most obstinate cases Woakes's plan of passing a probe or "acid-carrier" dipped in saturated solution of chromic acid into the cyst, may be tried.

It must be impressed on the mind of any practitioner without experience of this treatment that the operation, simple as it is, causes a great deal of constitutional disturbance. In women not particularly robust the pulse will often rise to 120 or more immediately after the tapping, and several weeks will often elapse before the vascular fervescence at length gradually subsides. Deaths have been reported, though none have come under the writer's own cognizance. Females, however, who are in any way fundamentally delicate, often remain in a state of weak health for many months.

He has never heard of any drugs being vaunted for the cure of cystic goitre, but electrolysis has been tried, as it has in other goitres, with, however, more promising results. According to Dickson, of Toronto, the best method is to empty the cyst by means of an aspirating needle insulated to within an inch of its point; then refill the cavity with a solution of common salt and connect the needle with the negative pole of the battery, the positive electrode being applied between the shoulders. A current of 30 milliampères may be employed for fifteen or twenty minutes, after which the sac is to be emptied and the opening sealed. The repetition of this procedure two or three times at short intervals may effect a cure.

It may be mentioned that operating surgeons sometimes enucleate the cyst in this class of goitres.

3. Until recent years exophthalmic goitre has been regarded as entirely outside the domain of surgery. The patient has, therefore, been subjected to the influence only of such drugs as seemed likely to combat the symptoms, especially bromides, digitalis, strophanthus, etc., with perhaps a surface application of electricity to the tumor or to the cervical sympathetic after the manner of Eulenburg. Iodine has not been relied on in this affection, as it has in ordinary goitres, although in one case recounted by Trousseau it appeared to have a specific action. Both thyroid and thymus glands, antagonistic substances as it is thought, have recently been administered, but the evidence does not yet enable us to decide as to their value. The persevering use of galvanism to the goitre sometimes produces a diminution of size, but the value of electricity is most marked when the negative electrode is applied to the course of the sympathetic nerve in the neck. An almost immediate reduction of the pulse to 80 or 90 often follows, with a general sense of relief to the patient, which may last for two or three days. When there is a tendency to spontaneous cure, or the malady is stationary, such measures are palliative in a very high degree. As early as 1873, Watson of Edinburgh had excised the goitre in three cases with encouraging results, but he was practically without imitators. Now, however, owing to the different views spreading as to the nature of Graves' disease, radical measures are steadily coming into vogue. Thus at the recent German Surgical Congress, Mikulicz of Breslau brought forward a number of cases treated by partial excision and also some by ligature of the afferent arteries. Unfortunately, at present the wave of psychotherapeutics has risen to such a height that a considerable number of practitioners are ready to attribute every successful result to hypnotic suggestion.

The author himself has been accustomed for some years to inject these cases as in ordinary goitres, though at much longer intervals than when there are no signs of neurosis. Not that he considers there is any

special danger to be apprehended from the injection in such patients, but merely that the subjects being as a rule in a very nervous state, the mere prick of the needle may drive them into hysterics, make a scene, etc., at the time, and even after some days the practitioner may hear that the patient is still displaying unusual restlessness in the domestic circle. After the injection has been done two or three times, however, this condition of things to a great extent passes off, and the sufferer submits with tolerable equanimity to the operation. It is just in this class of cases that freezing the surface becomes a valuable preparatory measure, and it is highly advisable to have recourse to it. He has little doubt that in the future the cardinal rule for treatment of exophthalmic goitre will be to first get rid of the bronchocele. Electrolysis has been tried in exophthalmic goitre, but he has met with no laudatory reports of its action.

THE PRESENT STATUS OF SERO-THERAPY.

The *Boston Medical and Surgical Journal* of November 28, 1895, in an editorial article states that:

At the Sixth Congress of the Italian Society of Internal Medicine, held at Rome, October 22 to 25, the present status of sero-therapy was discussed by Pio-Foa of Turin, Maragliano of Genoa, Petrone and Fazzo of Naples, Campana of Rome, and other eminent bacteriologists and clinicians.

MARAGLIANO claims to have experimentally obtained an antitoxic serum which possesses curative efficacy in tuberculosis, and which is giving good results in his own practice and in that of several of his confrères; the mode of preparation of this serum will eventually be published, though he is unwilling to make it known at present; it is derived, he says, "from animals vaccinated with all of the toxins contained in the virulent cultures, both those that resist and those that do not resist heat. Campana, of Rome, affirms his belief that Maragliano's serum is nothing but Koch's tuberculin, improved. As a dermatologist, he declares that this lymph in tuberculous affections of the skin favors the resorption of morbid infiltrations, but does not cure the tuberculous processes, and the same affirmation applies to tuberculosis of internal organs.

Fasano, of Naples, reported a case of pulmonary phthisis which seemed to have markedly improved under the use of this serum. Marrani, of Rome, has treated with benefit twelve cases of tuberculous broncho-pneumonia with Maragliano's serum. The results were, disappearance of the fever, of the râles, of the cough, of the dullness, a gain in spirits and in appetite, and increase of weight. Ascenzi of Rome, and Argento of Palermo, communicated—the first three, the second five—cases of tuberculosis treated with success by Maragliano's serum.

With regard to the serum treatment of diphtheria, Mya of Florence stated that he had treated 112 cases of diphtheria at the clinic of children's diseases with Behring's antitoxin; the results were twenty-two deaths and ninety recoveries. In a first series of fifty-one cases he had to do with diphtheria of the pharynx and larynx; there were fifteen deaths, giving a proportion of 29.4 per cent, (under the old treatment he used to have in these cases a mortality of fifty per cent.). A second series comprehends forty-three cases of simple diphtheria of the pharynx, with seven deaths and thirty-six recoveries. In a third and last series there were eighteen cases of pharyngeal diphtheria with beginning of extension to the larynx; all these recovered rapidly. In all these cases the diagnosis was controlled by the bacteriological examination.

Mya is in the habit of injecting daily during the first three days of the sickness 10 Cc. of serum. In fatal cases he has often observed want of success to coincide with a notable degree of hypertrophy of the glands; the autopsy has disclosed, along with grave alterations of the lymphatic system, fatty degeneration of the viscera. He is persuaded that if one would have recourse with success to sero-therapy in diphtheritic cases, there must be relative integrity of the lymphatic system. Another group of cases in which sero-therapy proves inefficacious includes those forms of diphtheria in which the exudate invades very rapidly the whole respiratory tract—that is, not only the larynx and trachea, but also the bronchial tubes. It is principally in the coldest months of the year that he has observed cases of this kind.

Maragliano, in summing up the diseases in which sero-therapy has been employed with more or less success, remarks that in streptococcus infection (notably in erysipelas and puerperal septicemia) the serum treatment has already produced sufficiently encouraging results to warrant further trials.

No success has followed attempts to similarly treat typhoid fever and cholera—that i

by the use of a serum obtained from patients recovered from the disease, or from immunized animals.

In tetanus, among thirty cases treated with serum from animals immunized by attenuated toxins, there have been thirteen recoveries.

Maragliano sums up the statistics of serotherapy in diphtheria by citing Huebner's figures: In 3066 cases there was a mortality of 20.6 per cent.; this is contrasted with a mortality of 38.8 per cent. before the use of antitoxin. He thinks that "the enthusiasm aroused by the discovery of Behring has been justified by the splendid results obtained in practice."

With regard to the serum treatment of pneumonia, there is little to add to the results obtained some time ago by the two Klemperers, and by Fowlisky and Emmerich; the Klemperers, in particular, claiming remarkable clinical success in several cases with their "anti-pneumococcic serum." Pio-Foa, who was referee at the meeting of the congress aforesaid, has been making numerous experiments on animals with a serum of his own preparation, which he calls an "anti-pneumococcic vaccine." He first tried glycerin extracts of infected blood, the glycerized extracts of the bodies of bacteria remaining on the filter, the precipitates obtained with sulphate of ammonia, etc. After having found out the complete inefficacy of the chemical vaccinations, with the exception of the filtrate of the meningococcus, he tried to obtain a vaccine prepared according to Pasteur's methods (attenuated by heat, by oxygen, by light, etc.). He finally obtained the desired attenuation by means of Lugol's solution, and by means of intravenous injection he now succeeds in vaccinating hares against the different varieties of *Diplococcus lanceolatus*, so as to cause them to support with impunity 160 Cc. of a culture sufficiently virulent to kill the test animals in a few hours. The duration of the immunity seems to be quite long—that is, three months, at least.

The experiments which Pio-Foa related, where hares, dogs, sheep and goats were rendered refractory to the pneumococcus infection, were of great interest and warrant hope that the serum treatment may yet be found to be of unequivocal benefit in the pneumococcus diseases of man. Foa found that when both the diplococcus and the serum were injected at the same time the animal survived, and when the serum was injected five hours after the infection the symptoms were light and the animal soon recovered; which indicates that the serum also exercises a curative action.

GLYCERIN IN INDUCTION OF LABOR.

HYPES contributes a paper bearing this title to the *American Journal of Obstetrics* for December, 1895. To sum up the argument: Intra-uterine injections are often inefficient, especially so in doses under 50 Cc. They are liable to be followed by all the ill-effects—shock, air embolism, thrombosis, metritis, and sepsis—of other intra-uterine douches which have been used and abandoned during the present century. They may and sometimes do produce glycerin poisoning—*i. e.*, decomposition of the blood-corpuscles—resulting in diseases of various organs, but more especially in nephritis with hemoglobinuria. The method takes no consideration of the life of the child, and hence results in great fetal mortality. Its use should be abandoned or the dosage reduced, especially in subjects with prior existing kidney affections.

UTERINE HEMORRHAGE.

In the *Clinical Journal* for Dec. 18, 1895, ROUTH enumerates the drugs useful for hemorrhages, as follows:

Ergot.—This is the remedy oftenest given. It acts by contracting the arterioles, apparently by virtue of its action upon the involuntary muscular fibre; and it has a special action upon the uterine muscle, encouraging tonic contraction. It may sometimes act on the intestines, and some people cannot stand it for that reason; this is well seen when the sucking child gets colic while the mother is taking ergot. Occasionally also one sees the effect of ergot on the heart, by a resulting pseudo-angina and infrequency of pulsation, especially in people whose hearts are already incompetent. The arterioles all over the body become contracted, and the heart is thus given more work to do. As a rule, however, ergot can be given for any length of time without trouble. By the lessened vascularity which it produces in the uterus it impairs the nutrition of fibroids, and it favors their extrusion by the uterine contractions it excites. Ergot ought to be given continuously in all cases of uterine hemorrhage where it is likely to be of service, beginning, as a rule, on the third or fourth day of the period, and suspending just before the menses again come on, especially if dysmenorrhea be usually present. Sometimes

one can continue the ergot in such cases by adding belladonna. The usual doses are one-half drachm of fluid extract ergot three times a day, or one or two grains of ergotin, or $\frac{1}{120}$ to $\frac{1}{60}$ grain of the very much stronger ergotinin.

Hydrastis is another very valuable drug, and is somewhat similar in its action to the combined effect of ergot and belladonna; for besides producing uterine contraction, and checking hemorrhage in the same way as ergot, it is a sedative. Half-drachm doses of the tincture answer very well.

Cannabis indica is also one of the best drugs we have, but it is not often given. One-fourth, one-third, or even one-half grain of the extract of cannabis indica is the usual dose, and it often seems to stop hemorrhage even better than ergot or hydrastis. If there be pain as well as hemorrhage—as, for instance, in dysmenorrhea caused by fibroids of the uterus—cannabis indica is much more useful than ergot. It can also be given in the form of tannate of cannabin, two to ten grains. The tincture is unreliable.

Lately Dr. Wright, of Netley, has introduced *chloride of calcium.* It was used many years ago in conjunction with bromide of potassium and chloride of ammonium for fibroids. At that time the action of the chloride of calcium was not understood; it was supposed that it deposited lime salts in the tissues of the fibroid, inducing calcareous degeneration. It does not do that. Dr. Wright has found that it is useful in many cases of hemorrhage, especially those due to hemorrhagic diathesis. He was able to check hemorrhage by giving two- to three-drachm doses of the B. P. preparation (liquor calcii chloridi) three times a day, after meals, for two or three days. [The strength of this preparation is one drachm of the calcium chloride to five of water.—ED.] Dr. Wright finds its action is due to the fact that the blood coagulates much more readily under its influence. The writer has tried it in one or two cases in which ergot and cannabis indica have failed, and it certainly does check the passive oozing of blood which sometimes continues for a week or ten days after the more profuse flooding which occurs in many cases of fibroids, and may prove to be a useful adjunct to the means already at our disposal to tide some of these bad cases over the menopause, and so enable us to more often dispense with oöphorectomy or hysterectomy.

While speaking of these special drugs, purgatives must not be omitted. They are of the greatest possible importance in the treatment of all uterine hemorrhages, and should invariably form part of the measures adopted.

THE DANGERS OF POTASSIUM IODIDE IN THE TREATMENT OF GOITRE.

At a recent meeting of the Société de Thérapeutique, a report of which appears in *Le Progrès Médical* of November 23, 1895, M. FERRAND related the following case, which had come under M. Couchon's observation: A man, thirty-five years old, suffering with an enormous goitre, had been taken with congestive symptoms. A physician had prescribed an iodized ointment and sixty grains of potassium iodide daily. The patient continued the treatment for three weeks, at the end of which time the goitre had diminished in size, but coryza, dyspnea, diarrhea, trembling and cachexia had supervened, and the patient died at the end of a month with symptoms of cardio-pulmonary paralysis. M. Couchon thought these symptoms might have been due to atrophy of the thyroid body.

M. Ferrand remarked that Lebert thought goitres were particularly susceptible to treatment with potassium iodide; Reuser had also observed the same thing. M. Jasiewicz said that occasionally very small doses had caused symptoms of iodism. M. Paul said that iodide poisoning was more frequently caused by personal susceptibility than by the size of the dose. M. Ferrand thought that the difficulty of elimination should be taken into consideration. In the case in question, he said, the poisoning had given rise to troubles of nutrition much more profound than could be attributed to the cachexia strumipriva. M. Paul remarked that in cases of poisoning from potassium iodide, iodism should not be exclusively considered. The different iodides did not act wholly through the iodine, as the different action of each of the following drugs demonstrated: potassium iodide, sodium iodide, iron iodide, and the tincture of iodine.—*New York Medical Journal*, Dec. 14, 1895.

THE ACTION OF MUSTARD AND PEPPER ON DIGESTION.

In nearly all experiments dealing with the action of condiments or other like substances on digestion, the work done has been limited mainly to the influence of the substance upon the secretion of gastric juice, or to the effect of the presence of the substance upon the pure-

ly chemical process of gastric digestion. Dr. GOTTLIEB, of Heidelberg, however, has recently tried some interesting experiments on the influence of mustard and pepper on the secretion of pancreatic juice. The experiments were conducted on rabbits, a cannula being inserted in the pancreatic duct, after which the condiments were introduced into the stomach. The presence of either of these substances in the stomach led to a marked increase in the secretion of pancreatic juice, the volume of fluid being increased three to four times. As might be expected, the juice secreted under these conditions was somewhat more watery than normally, but it showed the usual digestive properties on all three classes of food-stuffs.—Editorial in *Dietetic and Hygienic Gazette*, November, 1895.

SUSPENSION OF THE UTERUS.

KELLY (*Journal of the American Medical Association*, Dec. 21, 1895) states that the mortality in the two hundred cases he has operated upon since his residence in Baltimore, has been zero, and there was not a case of serious illness following the operation. There has been one recurrence of the retroposition, making the failures one-half of one per cent. In about five per cent. of the cases stitch-hole abscesses and separation of the lower angle of the incision occurred; this accident very rarely happens now, with his present technique in closing the abdominal incision.

The suspensory operation was abandoned in one case recently because the enlarged uterus was so friable that the stitches cut out as soon as they were tied.

In all cases where the vaginal outlet was relaxed it was repaired; at the same time the uterus was suspended. When there is both retroflexion and a relaxation of the vaginal outlet, if he can do only one operation he prefers to lift up the outlet under the pubic arch. It is well known that Kelly is an earnest advocate of the direct method of treating retroflexion by a small abdominal incision, bringing the uterus into anteposition and holding it there by two stitches through the anterior abdominal wall and the posterior surface of the fundus. He does this for four reasons, which are:

1. A natural tendency to continue investigation in the line already opened up.

2. The advantages of a direct inspection of the ovaries and tubes, as shown by the cases of inflammatory adhesions found at the operation, where it was not known that any had existed. In one case he was fortunate enough to find a little papilloma, not as big as the end of the finger, starting out of the ovary. When the uterus is adherent no other method can be so good, as this is the most direct way of dealing with the adhesions.

3. The mechanical advantages of his suspensory operation, acting directly on the posterior surface of the retroflexed fundus, are better than if the organ were held forward by pulling on the round ligaments on both sides.

4. Probably the best reason of all is the remarkable statistics of two hundred cases without a single death and with but one recurrence of the displacement—and that in a patient in whom a tube and an ovary were removed at the same time.

Suspension of the uterus is indicated in case of retroflexion which cannot be corrected or whose symptoms cannot be relieved by non-operative treatment, such as packing, massage, and pessaries. Dr. Kelly advises it in those cases of retroflexion which are more or less tied to the office of the physician by their ailment—patients who may go for years, better at times and then worse again for several weeks or more, and never feeling quite well.

He also urges suspension where the menstrual difficulties, backache and bearing-down pains, headache, loss of appetite, difficult defecation, and various general disturbances are persistent.

The classes just cited are easily recognized, because their pelvic symptoms are so prominent as to attract attention at once; but there is another class of neurasthenics equally important, whose local symptoms may be more or less in abeyance, and the first impression is that the neurotic condition is primary and fundamental and the local disturbance merely accidental. There is no class of cases where a good professional instinct and good judgment come into better play in selecting the suitable case and rejecting the others.

In a woman who is persistently neurasthenic, or in one who after repeated building-up efforts persistently falls back into a morbid neurotic state, where there is a retroflexion or retroposition, with definite pelvic disturbances becoming more marked at the menstrual period, the author would without hesitation urge suspension.

The method of operation is as follows:

1. After due preparation, emptying the bladder, and anesthesia, the abdomen is

slightly elevated and an incision three to five centimeters long is made, beginning about two centimeters above the symphysis, down into the abdominal cavity.

2. The peritoneum is then caught with artery forceps on each side and drawn out. This is to prevent pulling in the peritoneum by the suspensory sutures and leaving none to close the incision.

3. The retroflexed uterus is then hooked up and lifted into anteflexion by means of two fingers carried into the wound.

4. One side of the incision is then elevated with two fingers, and the peritoneum and subperitoneal fascia caught with a curved needle carrying the suspensory silk ligatures. The amount of tissue embraced is about one-third of an inch wide and one-eighth of an inch in depth.

5. The ligature is then conducted through the uterus on its posterior face below the fundus, and finally through the peritoneum and fascia of the opposite side, when it is tied, bringing the uterus up snugly against the anterior abdominal wall. If the pelvis is deep and the uterus lies out of reach, it may be brought up and held in position, while passing the suture, by means of an elevator. This is introduced down into the pelvis in front of the uterus, which is pressed into it and held as against an artificial symphysis. As soon as the first stitch is passed, the elevator is laid aside. After tying the first suspension suture, the second is easily put in, entering and emerging on the abdominal wall just above the first and piercing the posterior surface of the uterus just below the first; when it is tied it increases the anteflexion.

6. The sides and front of the uterus are examined to see that no intestine is caught, and the omentum is drawn down.

7. The abdomen is closed. This is done by taking off the forceps and sewing up first the peritoneum with the finest silk, and then drawing together the fascia with one or two silver wire mattress sutures, finally closing the skin with a subcuticular suture of fine silk.

The patient may rise sooner, but it is better to keep her quiet for two or three weeks. It is not necessary to wear an abdominal bandage, and a pessary is never put in afterward.

It was necessary in one case to reopen the abdomen for a hemorrhage following the operation; this arose from the slipping of the ligature at the cornu uteri, the site of an amputated tube and ovary. There was no trouble from adhesions or incarceration of a knuckle of intestine in front of the uterus in any case.

Out of one hundred and thirty of these cases, carefully analyzed by Dr. George W. Edwards for Dr. Kelly, the results, within a few weeks of the operation, were: One hundred were reported well, twenty-six improved, four not improved. The recovery was interrupted by a transient mania in three cases; by bronchitis in three cases; by pneumonia in one case; by stitch abscess in three cases; by hemorrhage from a repaired outlet in one case; by dysuria in four cases; by hysteria in four cases.

The proportion between married and single women was about two to one.

The number of children born since operation is not given. There have been at least six pregnancies, and in but one was there any marked discomfort and dragging due to the attachments of the womb.

He does not know of any case in which the retroflexion has recurred after pregnancy.

There has never been a hernia in any case.

In women who have borne children, retroflexion is often associated with descensus and relaxation of the vaginal outlet. It is useless to expect relief in these cases by simply suspending the uterus—which, instead of being gently detained in easy anteflexion, simply drags on its attachments until they give way. In such cases the vaginal outlet must invariably be repaired too. Sixteen out of one hundred and thirty-three cases needed the vaginal repair. In going over his statistics it is surprising to find so few needing this double operation, and he estimates the percentages at present as certainly much larger.

In seven cases both tubes and ovaries were removed, being diseased; in nine cases one tube and one ovary were removed; in three instances he ligated either uterine or ovarian vessels; in two a myomectomy was performed; in one a nephropexy.

REMOVAL OF THE UPPER EXTREMITY TOGETHER WITH THE SCAPULA AND CLAVICLE.

OCHSNER, in the *Annals of Surgery* for December, 1895, reports a second case in which he operated for enchondro-sarcoma, which had undergone colloid degeneration at several points. The tumors were situated respectively in the region of the supra-spinatus muscle and at the end of the clavicle.

The operator followed, in the main, the

rules laid down by Paul Berger. An incision was made over the clavicle, the periosteum reflected, a broad blunt instrument being inserted between the periosteum and the clavicle at the junction of the internal and middle thirds. One blade of a pair of bone-cutting forceps was inserted between the clavicle and the retractor, and the former was easily severed. The outer portion of the clavicle was now elevated, the blunt instrument being left in place to support the periosteum and the underlying vessels. The subclavian artery could now be felt pulsating underneath the periosteum, and on lifting the latter together with the subclavian muscle the dilated vein was plainly exposed at a point directly in front of the middle scalenus muscle. The brachial plexus was easily separated above by means of blunt dissection with the finger. A catgut ligature was now passed around the artery and vein by means of fine blunt hemostatic forceps. A silkworm-gut ligature, which had been rendered perfectly soft and pliable by immersion in hot water, was passed around the vessels in the same manner, at a point a quarter of an inch above the catgut ligature. After tying both carefully, forceps were applied to the vessels an inch below and the latter severed between forceps and ligature. Now the flaps were formed by carrying the incision forward and downward to the middle of the axilla from the outer end of the original incision. A second incision was carried backward over the outer third of the scapula and downward to meet the anterior incision in the axillary space. The skin-flaps were dissected up rapidly, and then the soft tissues were severed rapidly first anteriorly and then posteriorly along the surfaces of the ribs, all bleeding vessels being caught instantly with hemostatic forceps.

There was almost no blood lost during the operation. A pad of moist gauze was placed underneath the entire surface of the flaps to prevent oozing while the wound was being sutured, and when this was almost completed the gauze was withdrawn and pressure made over the flaps by means of pads for the same purpose.

A rubber drain was inserted through an opening made in the posterior flap, and a second one through the lower angle of the wound.

The wound was dressed on the fourth day, when the drains were removed. It was healed primarily throughout, except at two points half an inch in diameter which had become necrotic, probably from pressure. The patient was in an almost perfectly normal condition throughout the recovery. He insisted upon being up and dressed after the fifth day. He was kept at the hospital for four weeks after the operation, for fear some injury might occur to him, especially on account of his convivial habits. He is still (Sept. 1, 1895) free from a recurrence, and is in better health generally than for years before his operation, probably because he has abandoned strong drink and has secured lighter labor, being now watchman at a railroad crossing.

In a considerable number of amputations near the shoulder or hip the writer has noticed that the patient is comparatively little shocked when the large nerves are severed with a sharp knife or catling, but very severely when they are cut with scissors. Consequently, he has been careful in this instance to use the former instrument, and with benefit to the patient.

In a former case he ligated with silk, and was annoyed several months later by having the ligature come to the surface; consequently he used catgut in this instance, and, in order to be doubly sure, applied a second ligature of silkworm-gut, which was left long so as to be withdrawn in case the end of the vessel became necrotic beyond the ligature, a condition mentioned by several operators. This condition did not occur in this instance, hence the ligature was simply cut short after the wound had completely healed.

Outside of the danger from septic infection —which can, of course, be practically eliminated in all well regulated hospitals—the danger in this operation comes from hemorrhage or shock. Following the explicit directions of Paul Berger, described above, hemorrhage can be controlled with comparative ease if the operator is not too meddlesome.

Making the section of the clavicle after reflecting the periosteum, one is not at all likely to injure the underlying vessels.

The brachial plexus can be separated from the blood-vessels with safety. Having done this, it is much wiser to apply the first ligaature around both artery and vein and enough of the surrounding tissue to be entirely out of danger of wounding the vein, than to attempt to ligate the vessels separately. It is not difficult to separate the vessels from the underlying tissues by blunt dissection, permitting the passage of the ligature with blunt forceps or with an aneurism-needle. Later each vessel can be easily ligated separately.

This plan helps to avoid two dangers, viz.: injury to the vein, which may give rise to either hemorrhage or air-embolism; and shock caused by an unnecessarily prolonged operation.

All operators with whose views the author is familiar agree that the operation is indicated in all cases in which sarcoma involves the soft tissues of the shoulder-joint or the clavicle or scapula or humerus near the shoulder.

With the great tendency to recurrence after amputation for sarcoma of any portion of the humerus, it would seem best to perform this very radical operation even in cases suffering from sarcoma of the lower part of this bone.

THE PLANTAR WART.

DUBREUILH observes that warts on the sole have received scant notice in works on surgery and dermatology. Yet such are far from rare, and can hardly fail to attract the attention of those in whom they occur. Local injuries appear to play an important part in originating them. The starting-point may be a contusion. M. Bargues, a chiropodist of Bordeaux, blames the nails in shoes, too thin soles which do not protect the plantar surface sufficiently from inequalities of the ground, humps on old soles, too thick seams of stockings or socks. Neither Dubreuilh nor Bargues has noticed the coincidence of warts on the sole and on the hands. The localization supports the theory of traumatism. They occur most frequently under the head of the third metatarsal bone, where it is almost habitual to find a callosity more or less developed. They are also found over the head of the first or fifth metatarsal bone, or under the heel. These are the points of support of the arch of the foot, and, while callosities are common enough there, corns proper are rarer than on the toes. No situation, however, is entirely immune, and these warts may be met with on the plantar aspect of the toes, or on their points beneath the free border of the nails. Warts of the sole are in general single, or not numerous, yet Bargues has encountered a case of a woman whose feet were literally covered with warts, rendering walking nearly impossible.

A recent plantar wart exhibits a reddish, lenticular elevation, invested by a thin epidermis. Oftener at first sight it has the appearance of a large callosity, which is very painful. If this is scraped, the periphery is a hard, horny layer, semi-transparent, of an amber color. But the centre, in place of being dense and conical, is soft and depressible. The growth assumes the shape of a ring perforated by an opening which goes on enlarging in proportion to the depth to which the scraping is carried. The central portion is composed of a soft, horny, whitish tissue, which resists the knife or spoon like wet oakum. While the peripheral horny ring is homogeneous or stratified, the central part is fasciculated, and is made up of columns set vertically. Sometimes a black hemorrhagic point is seen; more frequently, if the erasion is continued, blood is seen to ooze from a number of capillary orifices.

Plantar warts are affected by changes of temperature and a moist state of the atmosphere, precisely as corns, but they are much more painful; they may render walking impracticable, and the sensitiveness is in no way lessened by superficial abrasion. This is because the lesion is much more voluminous than it appears, and extends deeply into the derma.

Curetting, after local anesthesia has been produced by the injection of cocaine, constitutes the most rapid and radical treatment. It is not difficult, after a breach has been made in the soft and elastic substance; and when all has been scooped out, a pot-like hole is left, one or two centimeters deep. The bleeding is free, but is readily arrested by plugging the cavity with iodoform gauze. The treatment should be carried out with antiseptic precautions, and the dressing should be of aseptic wool. Healing occurs readily, and at the end of a fortnight the hollow above mentioned will be completely cicatrized.

A careful histological investigation into the structure of these warts was made by Dubreuilh, which will be best studied in the paper itself, as it does not lend itself well to summarizing. He failed to find any microbe. —*Annales de Derm. et de Syph.*, Paris, May, 1895; *Edinburgh Medical Journal*, December, 1895.

CATHETERIZATION OF THE URETERS IN THE MALE.

GAITHER (*Journal of Cutaneous and Genito-Urinary Diseases*, December, 1895) calls attention to the fact that for many years it has been the aim of those interested in medical science to discover some method by which the exact condition of the kidney could be ascertained. Judging from the urine passed

by the patient, it was often impossible to tell whether the disease was in the urethra, bladder, or kidney. If the trouble were located in the kidney, the questions at once arose: Which kidney is affected? Is one kidney normal, or are both diseased?

Before the advances of modern surgery the answers had a value in reference to prognosis only; the treatment would probably have been the same under any circumstances. The catheterization of the ureters, the only method which could give a positive knowledge of the condition of each kidney, was believed to be impossible in the male. Many plans, varying in ingenuity and value, were suggested as a substitute for this operation. It was even attempted to compress one ureter by pressure on the abdomen, and then assume that the urine drawn from the bladder, which had been previously emptied, came from the opposite kidney. But as it could not be proved that one kidney had been completely shut off, the results obtained were of little value. To-day, with the steadily diminishing death-rate following nephrotomy and nephrectomy in properly selected cases, every conscientious surgeon should be confident of his position before any operation on the kidney is undertaken. The advances in electrical science have placed means at our command which could not have been thought of twenty-five years ago. The invention of the cystoscope by Nitze in 1879 gave the opportunity for the positive diagnosis of vesical and renal diseases. By finding the ureters and watching the jets of urine it was possible to estimate comparatively the amount secreted by each kidney, and to discover renal hematuria. In 1888 Brenner suggested that a cannula should be placed along the inferior portion of the cystoscope for the purpose of changing the fluid in the bladder without removing the instrument. Through this cannula he attempted to catheterize the ureters in the male, but without success. The late Dr. James Brown, of the Johns Hopkins Hospital, performed this operation successfully on June 9, 1893, using the Nitze-Leiter cystoscope with Brenner's modification (*Johns Hopkins Hospital Bulletin*, September, 1893). He met with many discouragements while perfecting the catheter, stylets, etc., but his indomitable persistence finally achieved the success he merited.

The methods here given are those introduced and practiced by the late Dr. Brown

The shaft of the cystoscope used is elliptical, having a circumference equal to a No. 28 F. sound. The vesical end of the cannula is separate from the shaft, curving downward when the cystoscope is in position in the bladder. The operating-table should be 92 centimeters high, with an extension on the top 45 centimeters wide, projecting 40 centimeters. The patient lies on his back, with his buttocks on the end of the projecting board, the legs being widely separated and resting on stools 64 centimeters high. This allows the operator room for his knees, as he sits on a stool, which can be adjusted to any height desired, in order to bring his eye on a level with the cystoscope.

Both the surgeon and the patient should be in a comfortable position, for the instrument must be held perfectly steady in searching for the ureter and (after the catheter has been introduced) while waiting for the urine to be secreted and collected.

The urethra having been irrigated with a 1:40000 bichloride-of-mercury solution, 2 Cc. of a four per-cent. solution of cocaine are injected into the deep urethra, and 4 Cc. into the anterior. As a rule, cocaine gives satisfactory anesthesia, but it is sometimes necessary to use ether or chloroform. In one case that could not be catheterized with cocaine the operation was easily performed under chloroform.

The bladder is washed, through a metal catheter, with a solution composed of Thompson's fluid with enough salt added to make a normal salt solution. Thompson's fluid is composed of borax one part, glycerin two parts, water two parts; and 300 Cc. are added to a flask containing 2000 Cc. of sterilized water. The solution is allowed to run in by siphon from a graduated jar, and care is taken not to overdistend the bladder; when it returns clear, the bladder is emptied, and from 100 to 300 Cc. (according as the capacity has been determined during the preceding irrigation) are introduced.

In one case, that of a man suffering from paralysis of the bladder of ten years' duration, it was not possible to find the ureters with 150 Cc. in the bladder, but when 250 Cc. had been introduced they were in plain view and easily catheterized.

The electrical power for the light is obtained from a four-cell storage battery made by the Southern Electric Company.

The shaft and beak of the cystoscope are immersed in a jar containing a five-per-cent. carbolic acid solution for one hour before being used. The catheter is wrapped in a towel saturated with 1:1000 bichloride-of-

mercury solution. The connections should be made, and the light tried with the cystoscope in the jar, just before introducing it into the bladder. By determining the distance to which the rheostat must be turned to give a perfect view in a clear medium, and not going beyond this point, a comparative estimate of the amount of renal hematuria can be made by noting the time taken for the fluid in the bladder to become opaque. The cystoscope, having been lubricated with glycerin, is introduced, and absorbent cotton wrapped around the ocular end to take up the few drops that will escape between the time the stylet is removed and the catheter inserted. The objection that the fluid escapes in such amount as to make a material difference has not been found true. If the cotton is pressed tightly into the cannula after the catheter is in the ureter, the leakage will be completely stopped. The ureter of the suspected kidney is first sought, as, in case much time must be lost in finding it, and the urine from only one side can be obtained, it is desirable to have that from the probable seat of the disease.

If the ureter is not easily found, it may be located by occasional jets of urine shooting across the window, or by a swirl of blood if the case is one of renal hematuria. The ureter may present at such an angle as to make the introduction of the catheter impossible. The presentation can be changed by raising or lowering the patient's leg, or it may be necessary to increase or diminish the amount of fluid in the bladder. When ready to catheterize, the stylet is withdrawn and the catheter quickly slipped into the cannula. The main difficulty to be overcome is to make the tip of the catheter take a sharp enough bend to enable it to engage in the mouth of the ureter; otherwise it slips over and along the bladder-wall most provokingly. Nitze's latest cystoscope is designed for the necessary curve, and is freely movable over the optical portion of the cannula in any direction without changing the focus, which greatly simplifies and facilitates the operation.

The ureter, in entering the bladder, passes obliquely for two centimeters between the muscular and mucous coats. As the catheter is pushed in, it can be distinctly seen running under the mucous membrane until it leaves the bladder. It is introduced eight centimeters, and, while in the ureter, is kept under continuous observation. In irritable bladders the tenesmus may bend the catheter almost to a right-angle.

The first drops appear in from one to five minutes, and are allowed to escape, in order that the bladder fluid may be washed out of the catheter. The flow is intermittent and irregular in amount. Fifteen or twenty drops may come in quick succession, followed by a few drops after an interval of from forty-five seconds to a minute and a half. A sterilized test-tube receives the urine, and in from five to ten minutes enough can be collected for the purpose of analysis. If the urine does not flow freely, it can be accelerated by pressure over the kidney downward along the course of the ureter. The Nitze-Leiter cystoscope can be used continuously if the current is turned off for one minute at the end of each ten minutes. After an hour's use the fluid in the bladder will not be found uncomfortably warm.

It is essential in all cases, in order to catheterize the ureters, first, that the bladder shall be capable of holding sufficient fluid to bring the mouths of the ureters into view; second, that cystitis or hematuria do not exist to such a degree as to render cloudy the fluid introduced into the bladder before a reasonable time has elapsed. If these conditions are complied with, almost every ureter can be catheterized. Repeated attempts may be necessary if the catheter does not have the proper curve, or if there should be great vesical tenesmus.

In one instance — a man with suspected pyelitis — although the ureters could be brought into plain view, and the catheter was repeatedly put against the mouth of each, it was found impossible to introduce it. Both ureters were surrounded by a circular ulcerated area with a radius of about five millimeters. Cocaine anesthesia was used, but the patient suffered considerable pain, and, after about ten minutes' futile effort, refused to allow the examination to proceed further. He would not submit to an attempt under chloroform, and left the hospital without a positive diagnosis having been made. Possibly there was a stricture at the mouth of each ureter, but the appearance on one side was that of an exceptionally patulous entrance. This was the only case in which it was impossible to catheterize the ureters when the vesical and renal conditions were favorable. On several occasions the ureter could not be located at the first attempt, even after diligent and protracted search, and the possibility of this embarrassing complication must be considered in estimating the chances of a successful catheterization. If general

anesthesia is used, the operation can be more easily and quickly accomplished. No great amount of skill is necessary, but one must have knowledge of the appearance of the normal bladder through the cystoscope, the position of the ureters, etc., which can only be acquired by considerable experience. Consequently, the operation will probably not become popular among surgeons generally.

In chronic nephritis the catheterization of the ureters is of the greatest value in establishing a correct prognosis. If the disease is found to be in one kidney, with the other normal or only slightly involved, the outlook is favorable. This condition would explain some cases which are seen clinically, in which the urine is loaded with albumin and tube-casts, but which go on for years without developing serious constitutional symptoms. The information obtained from catheterization will prolong many lives, by preventing the surgeon from operating when evidence of advanced disease on both sides is determined; and also by urging an immediate operation when one kidney is normal, with a pyelitis or pyelo-nephritis on the other side, exhausting the patient's vitality more and more each day. If one kidney is slightly diseased and the other considerably, it will influence the operator to do a nephrotomy instead of a nephrectomy, thus leaving the gland to aid its less crippled fellow, and possibly turning the balance on the side of life. By following the methods which are now opened to us, the percentage of fatal results after operations on the kidneys should be still further lowered.

The time has arrived when no renal surgery should be attempted until after the surgeon has obtained accurate and positive knowledge of the condition of each kidney by means of the catheterization of the ureters.

RUPTURE OF THE LIVER.

BRYANT (*Lancet*, Nov. 9, 1895) concludes an article on this subject with the statement that in the diagnosis of rupture of the liver there are no special symptoms which can be accepted as indicative of its existence, although severe shock and collapse as immediate results of a forcible local injury to the right side of the abdomen or to the lower part of the right side of the thorax should always suggest it; and even when the same kind of injury to the same regions is unattended by any such serious symptoms the surgeon should be alive to the possibility of a limited rupture of the liver, and should treat the case accordingly. The cases quoted afford ample evidence to support this proposition, and are more than enough to show the possibility of serious mischief to the liver in spite of an absence of serious general symptoms, when the nature of the injury has been such as to render it probable that such an injury may have been sustained. Had such a possibility been a prominent thought in the minds of those who had the treatment of the cases the writer quotes, the cases themselves, he believes, would not have been in his possession, since a recovery might have been secured in the majority of them.

With respect to the diagnosis of rupture of the spleen, the remarks just made with reference to the liver are equally applicable. It is to be recognized that cases of limited rupture of this organ, as of the liver, are quite reparable, as illustrated by Preparation 2018 in the Guy's Hospital Museum, taken from a body seven days after the injury; and that when such cases recover, they have, most probably, been regarded as examples of local traumatic peritonitis. In a case reported by the author, there was no suspicion of such a form of injury being present, and it was not till a fatal termination of the case by an acute peritonitis that an opportunity of finding out its cause was afforded to the surgeon. When a severe laceration of the spleen has taken place, death from shock and collapse due to hemorrhage is the common result. When the laceration is limited, the case may be overlooked and regarded as one of peritonitis. The cautious surgeon should, however, in all cases of injury from any local force applied to the left hypochondriac or lower thoracic region, whether with or without general symptoms, have the possibility of its presence before his mind, and this possibility, however remote, should always lead him to treat his patient with the same care and precaution as if, indeed, he felt sure this kind of injury existed. The observance of such care, under all circumstances, must be beneficial; its non-observance may be fatal.

Rupture of the stomach, when complete, is a very fatal injury, shock and irrecoverable collapse, as a rule, speedily following the escape of its contents into the abdominal cavity. When incomplete — that is, when only its mucous lining or peritoneal covering, with or without the muscular coat, is involved—recovery is not impossible. When the external injuring force is applied to the fully distended stomach, a rupture is more likely to take

place than when the stomach is empty, and this rupture may be either complete or incomplete. In the last case reported by the author it is reasonable to suppose that the rupture had been incomplete and had not extended sufficiently far to allow of extravasation of stomach contents, for no blood was vomited, although the stomach rejected food, and there were no primary symptoms to indicate any injury to the organ.

In the Guy's Hospital Museum there is a preparation (No. 592) showing a laceration and detachment of the mucous membrane of a stomach over an area of about two inches, extending transversely around the middle of the organ to within an inch of either side of the greater curvature. It was taken from a boy of nine years, who had been run over by an omnibus and who shortly after admission vomited a blood-stained fluid, dying the next day; in addition to the stomach injury, there were found laceration of the liver, extrasavated blood behind the pancreas, and a broken thigh. There is likewise a second preparation (No. 594) showing two extensive lacerations in the peritoneal and muscular coats of the stomach and a very slight tear in the mucous membrane; it was taken from a man who was brought into the hospital dead, having fallen thirty feet on to the deck of a vessel.

That the incomplete separation and laceration of the mucous coat of a stomach, as revealed by the specimen at Guy's Hospital, are clearly possible, is an important fact; and there is good reason to believe that the same accident may occur to the intestines, and even to the bladder, and that persistent or intermittent hemorrhage from either of these organs following injury should suggest its presence. Thus, a man aged thirty-nine fell thirty-five feet, striking upon his abdomen, and subsequently passed blood with his dejecta for seven consecutive days, associated with local tenderness over the colon, and then recovered. The author suspected laceration of the mucous membrane of the colon, and upon such a diagnosis treated him successfully. And in a boy about fourteen years of age, who fell from a height upon his perineum and subsequently had hematuria, and passed fresh clots and pure blood with his urine for some days, accompanied with pain, when there were no indications of urethral or renal mischief, the same diagnosis was rendered probable. At any rate, when, as a result of an abdominal injury, blood is found in small quantities at intervals, the probability of this symptom being due to a rupture of the mucous lining of the stomach should be entertained, and the treatment of the case modified by this opinion.

TREATMENT OF DISEASES OF THE SIGMOID FLEXURE.

BAUGHMAN (*Mathews' Medical Quarterly*, October, 1895) calls attention to the fact that the sigmoid flexure is more liable to a train of disturbances than any other portion of the colon, from the fact that it is the storehouse or receptacle where the feces are retained until their expulsion in the act of defecation. The rectum is almost entirely devoid of feces, except just at the time of and just before defecation. The fecal mass is retained in the sigmoid flexure until certain periods, when it descends into the rectum, producing a desire to go to stool, and if this desire is not gratified the mass of feces is lifted back into the sigmoid, where it remains until another desire for defecation; and even if all the fecal mass is not expelled from the rectum the remaining portion is lifted back into the sigmoid, where it remains.

The powers of the colon for absorption are very great, and all of the watery portion of this retained fecal mass is soon absorbed into the system and leaves a dry, hard mass in contact with the tender mucous membrane, which often brings on a train of diseases of this part that, unless relieved by appropriate treatment, results in confirmed invalidism.

While part of the functions and diseased conditions of the entire large intestine are similar, the sigmoid has various functions to perform and is the prey of various diseases that we seldom or never have higher up in the gut, but at the same time it is almost impossible to clearly separate them in diagnosis and treatment. The sigmoid flexure is more often the seat of obscure abdominal disease than has generally been suspected, and if we would pay more attention to the rational and common-sense treatment of the sigmoid we would get more cures and clear up many of these troubles. There are a great many cases of chronic diarrhea and chronic dysentery that go uncured for years and cause the patient untold suffering, and finally result in death, which, if located in the sigmoid flexure and given appropriate local treatment, would be cured. This is true to a great extent of the entire colon.

The various troubles in the sigmoid are

inflammation and all its attendant evils, beginning with congestion, and too often terminating in ulceration, stricture, and cancer. It is very often impossible to diagnose just what the trouble is. The symptoms are often vague and misleading, and only by the most painstaking examinations are we led to the truth. We most frequently have diarrhea, but on the other hand we frequently have constipation. Deep pressure over the left iliac region will generally elicit some pain if there is any serious disease in the sigmoid. It is very difficult to arrive at any positive conclusion as to tumors in this region, unless in the case of a very lean patient. We generally find vague pains through the abdomen and thighs, also in the bladder, uterus, and prostate, with disordered action in these parts. The most positive conclusions are obtained from the fecal evacuations. The patient generally complains of passing a great deal of matter at each evacuation, and often suffers pain in the lower part of the abdomen just before evacuation, and this pain is worse in the left iliac region. The physician should invariably see the evacuation, for the statement of the patient is often misleading, and it is from the nature of the evacuations that we are to learn most in our diagnosis. If we find that the discharges contain much mucus and no pus, we may be pretty sure there is no ulceration, but only a congested state of the mucous membrane, with perhaps a beginning inflammation. To say just where congestion ends and inflammation begins is a very nice point in diagnosis, and one that is not often attained. If there is pus in the discharges, we know we have to deal with a severe form of inflammation, and most likely ulceration; if blood and pus, we may feel very certain there is ulceration in some portion of the large intestine, and the chances are that if ocular and digital examination has shown the rectum to be healthy, this trouble is located in the sigmoid. If there is no specific trouble and nothing to indicate malignancy, these various divisions of congestion, inflammation and ulceration will be of great service to us in our prognosis.

A simple congestion should, as a rule, yield to appropriate treatment. If the disease has existed for some time, we generally find emaciation, and if there is much ulceration the sufferer is completely exhausted after each evacuation, of which there are often eight to ten in the twenty-four hours, containing mucus and pus.

The best treatment for a simple congestion or inflammation of the sigmoid flexure is, to begin with, an aperient of some kind, preferably sulphate of magnesia, and after the bowels have been thoroughly evacuated to introduce a Wales rectal bougie, No. 5, until it passes into the flexure, and then with a household or Davidson syringe, with the nozzle tightly fitted into the cavity of the bougie, to inject about half a gallon of hot water holding in solution from half an ounce to an ounce of boric acid. This should be retained five or ten minutes, and the injection repeated every twenty-four hours. The patient should also take but a moderate degree of exercise. A soft diet should be enjoined—oysters, milk, coffee, mush, soft-cooked eggs—with a very small amount of bread and but very little if any meats. Salol is a good internal antiseptic, but if there is any tendency toward diarrhea one drachm of subnitrate of bismuth should be given often enough to keep the bowels from acting more than once in the twenty-four hours, and the patient should go to stool just after the morning meal. After two or three days the bismuth will only have to be taken once a day, and then once in two days. It is claimed that the bismuth reaches the colon unabsorbed and acts as an antiseptic. Its healing qualities are well known.

The injections of hot water and boric acid should be kept up for five or six days, when the mucous membrane of the intestine will be in condition to receive a healing application. One to two drachms of fluid hydrastis should be diluted in two ounces of warm water, and injected into the sigmoid, the patient being kept very quiet for from one-half to one hour after, so that the medicament may remain for an indefinite time in the sigmoid. Once in twenty-four hours is often enough for this application.

After a few days it is well to use an injection of almond oil, iodoform, and subnitrate of bismuth, instead of the hydrastis; one ounce of the oil, with eight grains of iodoform and one drachm of bismuth, is about right for a single injection, and this may be kept up daily for some time, occasionally alternating with the hydrastis. It is well occasionally to wash out the bowel with the hot water and boric acid.

Most cases of a simple inflammatory character in the sigmoid may be cleared up by this treatment, and many cases of chronic diarrhea, dysentery, and constipation of years' standing may be cured, provided the inflammatory process has not produced organic changes that are beyond relief.

HOW TO AMPUTATE.

Under this title, in an eminently practical paper, WYETH (*New York Medical Journal*, Nov. 16, 1895) brings forward some points which he has evidently learned from hospital experience. He holds that hemorrhage is the chief factor of shock, and that to prevent loss of blood is essential. He usually considers the tarsus and the metatarsus as a single bone, paying no attention to joints, taking the precaution to remove any thin film of bone or cartilage which may still remain when the saw passes close to one of the articulations. The only exceptions to this rule are: *first*, in the matter of an amputation at or near the ankle-joint. From experience he believes a better degree of usefulness can be obtained by a properly adjusted artificial foot to the stump of a Symes amputation than to one which saves either a portion of the os calcis (Pirogoff), or when part or all of the astragalus is left in (Hancock). From the ankle to the hip the same conservative idea should prevail, unless, *second*, the line of the saw passes within an inch of the knee-joint or above the trochanters—in these conditions it is conservatism to remove the upper end of the tibia and amputate at the knee-joint, or to enucleate the head of the femur.

Of seven hip-joint operations performed by the author he has lost but one, and this not from hemorrhage. When, as in amputation at or near the ankle-joint, a rubber tourniquet is applied at or near the thigh, care should be taken to use a wide rubber band and not a rubber tube, since the accumulated pressure of the rubber tubing is sometimes great enough to injure the nerve. The author has seen paralysis follow in several instances as the result of traumatic neuritis caused by the tourniquet. In high amputations near the shoulder or hip, this objection does not prevail, since pressure on a nerve is immaterial at these points.

In performing the Symes amputation he carries the incision from the tip of the malleolus on either side directly downward parallel to the axis of the leg, the foot being held at right-angles to the leg, thus avoiding sloughing of the inner side of the flap, because the posterior tibial artery, particularly the external plantar branch of it, is not interfered with by this incision. In general amputations of the leg or arm a circular skin-flap with or without lateral incision, as the emergency demands, is the ideal flap, the muscles being divided an inch or more above the level of the circular incision through the skin, and the bone sawed on a level with the muscle. Dissection of the periosteum from the end of the bone in order to secure a periosteal flap is entirely unnecessary and should not be done.

In certain cases of amputation, when osteomyelitis has prevailed, it was thought that the surgeon might be called upon to carry his amputation high up, close to the shoulder or hip-joint, in order to get above the disease in the bone. This is not good surgery, for the longer the limb the more useful to the patient, and bones that are the seat of osteomyelitis can be readily cured, provided the canal is opened even near the knee or elbow-joint and the bone carefully curetted up to the end of the canal. The insertion of a drainage-tube through which aseptic irrigation is made every day or two, and the gradual withdrawal of the tube, will cure the disease in the bone and leave the stump long and useful.

He states that another point has been of great service to him in effecting rapid amputation. When making a hip-joint amputation or an amputation through large masses of muscular tissue, after tying large arteries, such as the two femorals and the circumflex branches, in order not to lose time that is usually spent in applying forceps to oozing surfaces, he passes deep catgut sutures through great masses of muscle all the way across the whole cut surface, and ties these firmly. In this way the muscles are brought together and compression exercised which prevents bleeding. Ten or fifteen minutes can be saved by this practice in an ordinary amputation.

In hip-joint amputation, he states, complete control of hemorrhage can be obtained by carrying the strong white rubber tubing close in the crotch, where it is held by the inner pin, while the other pin is so inserted that the tube passes in the notch just below the anterior superior spine of the ilium, from which the sartorius muscle originates. In this way the pressure is entirely above the level of the hip-joint, the capsule can be opened, and disarticulation rapidly effected without any attention to the tourniquet. If the tourniquet is not tightly applied, when the bone is removed and the rubber tubing is slackened by diminished resistance there may be some slight dripping from the vessels in the posterior part of the flap; but this is of no consequence, and can be promptly controlled by pressure with the fingers and application of artery forceps.

SEVENTEEN CASES OF CHRONIC (RELAPSING) APPENDICITIS, TREATED BY OPERATION.

HUNTER MCGUIRE (*Medical News*, Nov. 30, 1895) reports seventeen cases of relapsing appendicitis treated by operation. He makes a clean cut straight down in the most prominent part of the swelling, if there is any; and over the supposed site of the appendix if there is no swelling. This incision is almost transverse, beginning near the anterior superior spinous process and running inward and slightly downward toward the outer border of the rectus. He holds that this transverse incision lessens the subsequent danger of hernia. The incision is not more than two inches long in the skin, and narrower as the cavity is reached. The peritoneum is opened most cautiously, as a piece of omentum, or, more important, a portion of the gut, may be adherent and in the line of incision. All adhesions are freed, and the appendix is removed in the ordinary manner. Iodoform is freely dusted over any injured places in the peritoneum. Gauze drainage is introduced when necessary, and the wound closed with a continued fine silk suture for the peritoneum, and silkworm-gut for the muscles, fascia, and skin. There was one death.

DIAGNOSIS OF RENAL CALCULUS IN WOMEN.

KELLY (*Medical News*, Nov. 30, 1895) reports three cases in which he diagnosed the presence of renal calculus by means of instrumental exploration through the ureters.

By renal catheters he demonstrated a unilateral or bilateral pyelitis, and the grade of each.

By suction at the outer end of the catheter he brought down bits of stone for a microscopic and microchemical examination.

The color of these pieces of stone signified a long retention in the pelvis of the kidney.

A piece of stone, black and rounded on one side, and light-colored and jagged on the opposite, was evidently broken off from a larger calculus and caught in the eye of the catheter by friction and suction.

The bruised end of the catheter was conclusive evidence of violent contact with a hard body.

SPLENOPEXY.

The substitution of fixation in place of extirpation of wandering spleen is such an entirely rational method of treatment, that PLUCKER (*Cent. f. Chir.*, No. 40, 1895), in the belief that cure cannot be effected by simple fixation of the parietal peritoneum, devised and practiced the following method on a man of twenty-three years. The patient was placed in the Trendelenburg position and an immediate opening made. The spleen was found in the true pelvis, enlarged, thick, and very movable. The patient having been placed on his right side, an incision four inches long was made in the middle axillary line over the crest of the ilium and the lower border of the ribs. A second incision was carried at right angles to this and parallel to the tenth rib, and of equal length. The cuts divided all the soft parts down to the peritoneum; the musculo-cutaneous flaps were reflected; the peritoneum was loosened above and below from the tissue to which it was attached by means of the retro-peritoneal fat and connective tissue, and a very small incision (just large enough to allow the spleen to be extruded) was made in this membrane. The spleen was now pressed from the belly through this opening, and secured in the retro-peritoneal region. A line of suture placed circularly about the peritoneal opening narrowed the latter and fixed the parietal peritoneum to the vascular and ligamentous pedicle of the spleen. The spleen now occupied its normal position, excepting that it was to the outer instead of the inner side of the peritoneum. To secure it in this position a thread was thrown around the tenth rib and secured to the lower pole of the spleen. This thread was at once tied by a line of suture, including the divided fascia below the tenth rib and the retro-peritoneal connective tissue and fat, so that the spleen was enclosed into the peritoneal pocket behind. A few interrupted sutures secured the upper portion of the spleen, and finally the thread thrown around the tenth rib was secured. This operation is not dangerous, is quickly performed, and gives permanent results.

CASE OF PERFORATED GASTRIC ULCER; LAPAROTOMY; GASTROSTOMY; RECOVERY.

PAUL (*Medico-Chirurgical Journal*, No. 29, 1895) reports a case of gastric ulcer in which he successfully operated. The patient was thirty-one years of age and had suffered for a number of years from dyspeptic symptoms. Notwithstanding her constant pain and the advice of her doctor, she took a cold-meat supper, which was followed by vomiting,

along with the most agonizing pain in the abdomen. The patient was found in a condition of most profound collapse, from which she rallied after some hours. Operation was begun nine hours after the onset of the first symptoms. An incision four inches long was made between the ensiform cartilage and the umbilicus. As soon as the peritoneal cavity was opened, sour-smelling gas and greenish liquid escaped, and the neighboring viscera showed signs of commencing peritonitis. The ulcer, though in a most awkward position, was easily found, on account of its very large, hard and thick base, which made it feel like a malignant infiltration. It was located at the cardiac end of the lesser curvature, and it required some tension to keep it in view, even although the left rectus muscle was cut across to the margin of the costal cartilages. The rent was transverse, and measured about half an inch in length. Closure was extremely difficult, but was accomplished finally and reinforced by a tag of fatty omentum. The stomach was drained by the introduction of a glass tube, as recommended for gastrostomy. The patient suffered from hemorrhages from the stomach and from diarrhea, and had a protracted convalescence. When the stomach-tube was removed, the opening closed.

Paul states that the cases reported since Mr. Gould opened a discussion on this subject at the Bristol meeting of the British Medical Association, all tend to confirm the views he expressed, both as to the causes of failure and the best means to attain success. The former may shortly be stated as: (1) collapse; (2) imperfect cleansing of the peritoneum; (3) further leakage of stomach contents. Fatal collapse is to be avoided by operating in the stage of reaction before peritonitis has fully developed. Operation should be as short and simple as is consistent with the object in view. The peritoneum is best cleansed by thorough flushing with hot water at a temperature of about 100° F. Per toneal drainage is better not resorted to, except in those cases where peritonitis is fully established, and most of these will die anyway. The third cause of failure—further leakage—is generally due to the inaccessibility of the ulcer, and the best means to be taken to avoid it have not yet been agreed upon. When the orifice can only be imperfectly closed, it may prove wise to drain the stomach by a temporary gastrostomy. When it is quite inaccessible, it might possibly be sutured through an incision in the anterior wall of the stomach. It is not every ulcer that could be got at, even in this way. The readiest way of meeting the difficulty was adopted by Mr. Maurice, of Reading, when he introduced an india-rubber tube into the stomach through the perforation, and packed it round with gauze. Washing-out of the stomach is not generally a desirable proceeding.

The author holds that many cases of gastric ulcer can be traced to the use of corsets.

RETROVERSION OF THE UTERUS.

BOISE (*American Journal of Obstetrics*, November, 1895) advocates the following operation for this condition:

First (the vagina having been thoroughly disinfected), drawing the cervix forward until the sacro-uterine ligaments are made as tense as possible; denudation of vault of vagina in a direction corresponding to the ligaments to as great an extent as may be necessary; passing a large curved needle from one end of the denudation to the other, through the longitudinal axis of the ligaments, armed with large or chromicised catgut, and leaving the ends of the catgut free (clamped by forceps) to be tied later.

Next, thorough redisinfection of the hands; opening the abdominal cavity through one of the recti muscles, care being taken to separate the fibres of the muscle without cutting or tearing; breaking up the adhesions carefully; treating the appendages according to indications, care being taken not to injure the round ligaments; then temporary covering or closure of the abdominal wound. After this, opening the inguinal canals and drawing the round ligaments forward as far as may be necessary, care being taken not to have them too tense; then careful, accurate closure of the divided fascia by interrupted sutures of sterile chromicised catgut or kangaroo tendon, passed through the ligaments in such a manner as to hold them in close apposition to the under surface of the united edges of the fascia. These sutures should be tied securely and left buried by closing the integument with continuous catgut suture, subcutaneous if preferred.

The position of the uterus should be verified through the abdominal wound before the sutures which fasten the ligaments in the inguinal canals have been tied.

Closing the abdominal wound by a continuous catgut suture which unites the peritoneum; by interrupted catgut sutures (chro-

micised), or by kangaroo tendon, passed through the fascia, by which its edges must be carefully approximated; and, lastly, closing the integument as in the inguinal wounds.

The fibres of the recti muscles may be drawn together by sutures or not, as desired; generally they will be brought closely together by the sutures which unite the fascia.

Finally, tying the vaginal sutures and thus drawing the cervix back to its normal location.

By this procedure the uterus will be placed in a position as nearly anatomically and physiologically normal as possible.

A CASE OF TRAUMATIC TETANUS TREATED WITH TETANUS ANTITOXIN.

W. Wray Grayson (*Pittsburg Medical Review*, October, 1895) reports a case of traumatic tetanus successfully treated by tetanus antitoxin. A child, six years old, was wounded in the foot by a wire nail, developing the first symptoms of the disease on the seventh or eighth day following. The early symptoms were: malaise, followed by stiffness of the jaws and muscles of the back of the neck, and strong flexion of the toes of the wounded foot. The following five days the disease made slow progress, and when first observed by Grayson the pulse was 115, the temperature 100.5°, patient complaining of pain in the back of the neck and on attempting to bring his head forward; also epigastric pain, and difficulty in swallowing; right foot in talipes equinus position; mouth could be opened an inch or more, but not without pain; tongue wounded in several places. The child was purged and given small doses of chloral and bromide. The following three days he became gradually worse, the temperature reaching 101.5°; the paroxysms of painful spasm were frequent, and a tendency to general opisthotonos developed. Twelve days from the first onset of the disease, antitoxin was administered—pulse being 88, temperature 98.8°. The patient having been placed moderately under chloroform, 10 Cc. of the serum was injected into the left buttock. The next day it was noted that the paroxysms, though frequent, were less severe, and that he slept better. A second, smaller, dose of the serum was given under chloroform; the patient had but one paroxysm in the twenty-four hours following. Five cubic centimeters of serum was then given; there was no pain; no paroxysm. Another 5 Cc. was followed by a steady improvement. On the following day the final dose was administered. The foot remained extended for some time, but could be flexed without pain. The patient convalesced steadily. About a week later a papular eruption appeared on the face and arms and finally extended over the entire body.

[It should be remembered in connection with this case that tetanus which is not fatal very soon after the attack begins frequently permits the patient to recover, so that this test is not as positively in favor of tetanus antitoxin as would appear at first glance.—Ed.]

THE OPERATIVE TREATMENT OF CONGENITAL DISLOCATION OF THE HIP.

Hoffa (*Berliner Klinik*, June, 1895) reports the results of his operation for congenital dislocation of the hip, which consists in exposing the joints, deepening the cotyloid cavity, and placing the head of the femur in its normal position. He describes also the different modifications in the technical details of his procedure which he has adopted from time to time. This paper deals with the results of one hundred and twelve operations performed on eighty-two patients, thirty of whom were affected with bilateral, and the remaining fifty-two with unilateral, dislocation. In three of these cases death occurred as a direct result of the operative treatment, having been due in two cases to prolonged anesthesia with hemorrhage and shock, and in the third instance to iodoform poisoning. These disasters led the author in subsequent operations to perform the operation more rapidly in order to avoid chilling of the patient, to refrain as far as possible from division of muscles, and to substitute simple sterilized gauze for iodoform dressings. In nine cases the operation was followed by anchylosis of the affected hip. This unfortunate result is attributed in eight of these instances to suppuration in the wound. In the remaining cases of recovery in which the treatment resulted in the establishing of a freely movable joint, there was no subsequent tendency to stiffness of the hip, either from adhesions or from muscular contraction. In most cases, it is stated, the mobility of the limb increased steadily after the discharge of the patients from the hospital. Return of the luxation was noted in one case, in three the bone was displaced backward, and in eight forward. In the cases of backward

displacement the patients had been removed from the author's supervision before the completion of the treatment. The forward displacements he attributes to insufficient deepening of the cotyloid cavity; these occurred in his early cases. In instances of unilateral dislocation the operation is followed by decided lengthening of the affected limb, in consequence of the restoration of the head of the femur to its normal level. The amount of persistent shortening due to deformity of the neck of the displaced bone is not very great, and may be obviated by obliquity of the pelvis and by the use on the affected side of a boot with a thicker sole. In cases of bilateral dislocation the author states that his operation results in a removal of lordosis, in a reduction to a minimum of the waddling gait, in restoration of the normal direction of the limbs, and in increased abduction mobility. It is asserted that in all cases of successful operative treatment by this method the improvement persists steadily from the period of convalescence and increases from year to year. The best possible operation in cases of congenital dislocation of the hip is one which will enable the surgeon to effect complete reduction of the displaced head of the femur and to establish a movable joint. The author insists on the necessity of preserving the continuity of the muscles of the joint and of restoring their healthy condition and contractile vigor. In recent modifications of his operation he refrains as far as possible from cutting the contracted muscles, and in his after-treatment he attaches great importance to electricity and massage.—*British Medical Journal*, July 13, 1895.

Reviews.

WOOD'S MEDICAL HAND ATLAS OF OPHTHALMOSCOPY. With an Introduction to the Use of the Ophthalmoscope. By Prof. O. Haab, M.D. Translated and edited by Earnest Clarke, M.D., B.S. (London). New York: William Wood & Co., 1895.

Since the appearance of Yaeger's altas, a phenomenal work considering the then early youth of ophthalmoscopy, and the later work of Liebreich, no systematic collection of pictorial representations of the normal and diseased eye-ground has been published. The great value of these books, fulfilling every need, must be accepted as the reason, in these days of book-making, that the artistic ophthalmologists have resisted the temptation to add to their number. Yet in view of our more advanced pathology, more scientific classification, and increased knowledge of disease of the fundus, a new atlas based on the most recent additions to our conceptions of the various diseases should be warmly welcomed. Haab's work is essentially new. His drawings are pictures of actual conditions in patients seen by himself during life, and often microscopically studied after enucleation or death, and copied under his own directions. In his effort to represent a series of prevalent eye diseases that shall conform both to truth and to modern classification, he has been eminently successful. The old routine group of cases has been extended to include many conditions not heretofore represented, notably several of coloboma of the choroid, dislocation of the lens, papillitis of meningitis and of tumor of the brain, optic atrophy following division of the nerve, the retinitis of anemia and that of diabetes, syphilitic arteritis in the retina, conjunctival changes accompanying syphilis, old age, concussion, the entrance and lodgment of foreign bodies, and sarcoma of the choroid.

We note with surprise the omission of a description or delineation of one of the commonest diseases, namely, acute or chronic central retino-choroiditis of syphilitic origin. Haab has pictured several diseased conditions of the foveal regions which are not frequently met with, and omitted one of the most important.

Without exception the drawings are true and the colors natural. The artist has avoided the error common to his predecessors, of exaggerating contrasts by intense coloring, and has succeeded in producing lifelike representations. The German classification of diseases of the retina and choroid has been followed.

The introduction is a well written, easily understood description of the direct and indirect methods of using the ophthalmoscope, of retinoscopy and the errors of refraction, but not superior to those found in every textbook on diseases of the eye.

Mr. Earnest Clarke has been successful in his translation. He has confined his attention to presenting a careful literary version of the German text, with the exception of four figures taken from his book on Eye Strain in illustration of the direct method of examination.

The book is of convenient form, free from typographical errors, and neatly bound, and is by far the most desirable atlas of the kind published. H. F. H.

CUTANEOUS MEDICINE: A Systematic Treatise on Diseases of the Skin. By Louis A. Duhring, M.D. Part I. Illustrated.
Philadelphia: The J. B. Lippincott Co., 1895.

Dr. Duhring's name is instinctively associated, in the minds of the profession in America and abroad, with the best dermatological literature and the best original work in dermatology of the last few years, and we therefore examine with interest the first part, or fasciculus, of this work, which we are told in the preface has been written to take the place of the author's Practical Treatise upon Diseases of the Skin, a work that is largely patronized by his professional brethren and has been translated into French, Italian and Russian since its first publication.

Dr. Duhring has attempted, in re-writing his book, to deal with the subject entirely from a practical standpoint, and the work rests as a whole on clinical observations supported by pathology and pathological anatomy; the rapid strides made in dermatology during the last few years receive due notice. He emphasizes the necessity of regarding the skin as an ampler index of disease than it has been given credit for, both by the specialist and the general practitioner, while the opinions he expresses in regard to therapeutics are mostly based upon personal experience in hospital, dispensary, and private practice during a period of nearly thirty years. The text of this first part embraces the Anatomy of the Skin, the Physiology of the Skin, General Symptomatology, General Etiology, General Pathology, General Diagnosis, General Treatment, and General Prognosis, and the illustrations are nearly all of them designed to illustrate anatomical facts.

It is not often that the author of an eminently practical and unusually successful text-book has the courage or the conscience to sit down and re-write a *magnum opus* in order to place before us the views which he has gained by large experience, and Dr. Duhring and his text-book both deserve the success in the future which has been so freely given them in the past.

A MANUAL OF THE PRACTICE OF MEDICINE. By George Roe Lockwood, M.D. Illustrated.
Philadelphia: W. B. Saunders, 1896.

Text-books on medical topics are written with various objects—sometimes to exploit the original views, good or bad, of the author; sometimes to fill a vacancy which is believed to exist in medical literature; and again in order that the students who attend upon the lessons in medicine may have some volume which embodies the teacher's views or which covers the course he goes over year by year in his didactic and clinical lectures. It is the last object which has evidently stimulated the author to the compilation of this volume, for we do not find through its pages anything original, either in the text or in the arrangement of the chapters. He tells us in his preface that he has followed the classification or arrangement adopted by Dr. Osler, of Baltimore, in his well known text-book which we reviewed in our last issue. There are a number of colored plates in the book showing temperature charts, bacilli, and cross-sections of blood-vessels and organs. While many of these are admirable, they are nearly all derived from other and well known authors.

In regard to the diagnosis of uremia, we do not think that high arterial tension, scanty and albuminous urine, and the presence of fever are the three cardinal diagnostic symptoms, as one is led to believe if he follows the text.

Doubtless the volume will prove a safe guide to Dr. Lockwood's classes in the Woman's Medical College of the New York Infirmary, and as it was evidently written chiefly for this purpose the author has succeeded in accomplishing his end.

OUTLINES OF PRACTICAL PHYSIOLOGY: Being a Manual for the Physiological Laboratory, including Chemical and Experimental Physiology, with reference to Practical Medicine. By William Stirling, M.D., Sc.D. Third edition, revised and enlarged. Copiously illustrated.
Philadelphia: P. Blakiston, Son & Co.

As an evidence of the fact that the author believes in teaching not only by text but by pictures, we may mention that this volume, which is a small octavo of only 400 pages, contains no less than 289 illustrations, which are scattered through seventy-six so-called lessons or chapters. It is readily seen, therefore, that the book contains a very large amount of information condensed into a very small space, and affords one of the best laboratory manuals which can possibly be placed in the hands of the student of physiology who is fortunate enough during his medical course to find time for actual experimentation. Dr. Stirling has brought his text up to the most recent physiological advances, not only by his own work but also by carefully culling from recent standard authorities the latest facts, chiefly in physiological chemistry; and we trust that in the reorganization of medical teaching now going on in the United States, this book may receive the degree of patronage which its quality deserves.

THE AMERICAN YEAR BOOK OF MEDICINE AND SURGERY. Being a Yearly Digest of Scientific Progress and Authoritative Opinion in all Branches of Medicine and Surgery. Collected and arranged, with critical editorial comments, by sixteen collaborators, under the general editorial charge of George M. Gould, M.D. Profusely illustrated.
Philadelphia: W. B. Saunders, 1896.

This is a very handsome volume, large octavo, nearly 1200 pages, which the editor tells us in his preface is designed to give physicians an epitome of the new and progressive medical truths and suggestions made between the months of July 1894 and June 1895. The articles, as a rule, have been prepared by men who are recognized in their various branches of medicine as quite competent not only to make abstracts of the best articles concerning practical medicine and surgery, but also to criticise them forcibly and clearly. In most instances these gentlemen have been assisted by younger men, to whom has no doubt fallen most of the drudgery of the preparation of the articles. The book is characterized by the admirable quality of the illustrations, by the copious references to various authorities quoted, and by the admirable index of over fifty pages. Containing as it does a condensation of the best medical literature of the past year, it will prove a valuable volume to any practicing physician who may be wise enough to purchase it.

INTERNATIONAL CLINICS: A Quarterly of Clinical Lectures. Edited by Judson Daland, M.D., J. Mitchell Bruce, M.D., and David W. Finlay, M.D. Vol. II. Fifth series.
Philadelphia. J. B. Lippincott Co., 1895.

Looking through this volume, to which a large number of medical teachers have contributed, we are impressed with the fact that the general quality of the lectures is better even than that of preceding volumes. The chapters which seem to us of particular interest are those of Dr. Wharton Sinkler, upon "The Tendency toward Recovery in Certain Cases or Tabes Dorsalis," "A New Method of Infiltration Anæsthesia," by Dr. Schleich, and "Sympathetic Inflammation of the Eye, with Illustrative Cases," by Dr. G. E. de Schweinitz.

This series enables the physician far removed from medical centres to provide himself with information such as he could obtain by attending a course of good practical lectures in any one of the great hospitals or medical schools in this country or abroad, and for this reason we can readily understand why it is that the publication of these Clinics has proved so successful.

A HANDBOOK FOR HOSPITALS. By Abby Howland Woolsey. Third edition.
New York: G. P. Putnam's Sons, 1895.

This book was written for the use of the visitors of the State Charities Aid Association of New York, and contains information as to hospital buildings, ventilation, drainage and heating, nursing, the care of the insane, maternity wards, disinfection, and village hospitals. It is therefore a valuable manual to persons who are interested in the managements of hospitals or other charitable institutions, and may be read with advantage by architects and other persons who have to deal with the hygienic arrangements of buildings. In the appendix, interesting material is given as to the outfit for wards of twenty beds, of how to wash woolens, how to make various kinds of soap, the general rules which should govern hospital attendants, nurses, and patients, and finally the methods which should be employed in disinfection.

AN AMERICAN TEXT-BOOK OF SURGERY, FOR PRACTITIONERS AND STUDENTS. By Charles H. Burnett, Phineas S. Conner, Frederic S. Dennis, William W. Keen, Charles B. Nancrede, Roswell Park, Lewis S. Pilcher, Nicholas Senn, Francis J. Shepherd, Lewis A. Stimson, William Thomson, J. Collins Warren, and J. William White. Edited by William W. Keen, M.D., LL.D., and J. William White, M.D., Ph.D. Second edition, carefully revised.
Philadelphia: W. B. Saunders, 1895.

It is with pleasure we note that a second edition of this admirable text-book has been required in little more than three years from the appearance of the first edition. This shows with what favor a truly serviceable work is received by the profession, and is in itself an endorsement more convincing than any words of praise that may be said by reviewers. It may be stated that the only changes are those necessitated by trifling errors and omissions and by the necessity for bringing the teaching thoroughly up to the most advanced knowledge of the day. This has necessitated in some cases considerable enlargement. Thus the effect of modern small arms in military surgery, many improvements and modifications of surgical technique, and some quite new operations, have required space. It is worthy of note that nearly everything of value which has been contributed in recent years to the general knowledge of surgery will be found in this volume. As a wise departure from the more common method it will be observed that each illustration that is not original is credited to its author immediately under the

cut, instead of the credit being given in the list of illustrations. There are a number of new and very admirable illustrations in this edition.

As a general criticism it may be said that this work better fills the requirements of a text-book of surgery for practitioners and students than any other published in the English language.

Correspondence.

LONDON LETTER.

By St. Clair Thomson, M.D., F.R.C.S. Eng., M.R.C.P. Lond.

When should we use the adjective "tuberculous," and when "tubercular"? Do they designate the same condition — are they synonymous and therefore interchangeable? The confusion in the employment of these two terms originates, of course, from the fact that "tubercle" has come to mean something more definite and specific than the condition to which it was originally applied. Originally it was used to designate a small knob; it is still used entirely in this sense in osteology; and in the adjectival sense "tubercular" designates a part studded with small projections or tubercles. But tubercle, a term originally applied simply to a coarse morphological condition, has been retained ever since we came to learn that it connoted nodular masses of cells formed around colonies of a specific bacillus. Now the authority of the *Lancet* and the *Medical Press* both lay it down that "tubercular" is the adjective of the original anatomical or morphological sense in which the noun was used, and should always be employed with much the same meaning as is given to it in anatomical text-books; when used in a pathological sense the proper adjective is "tuberculous," which denotes the various changes produced by the *Bacillus tuberculosis*. In support of the view that "tuberculous" is the correct term to indicate the specific infection, the *Lancet* points out that it is the term commonly employed in the pathological writings of our French and German colleagues. Now many writers employ both terms indifferently, and in so far as they are indiscriminate in the use of them they are undoubtedly wrong. But again there can be little doubt that the adjective "tubercular" is employed by a large number of writers, if not by the majority, in cases where the purists would have us use "tuberculous." I doubt if many authors speak of "tuberculous laryngitis or osteitis." Dr. Huggard, the well known British physician resident in the Alpine station of Davos Platz, points out that the termination "ous" means "full of" or "abounding in;" the termination "ar" means pertaining to. This distinction is illustrated in "populous" and "popular." The tendency, however, is for the termination "ar" to supplant its rival. If indiscriminately used, the termination "ous," with its definite meaning, would often be wrong, while the less definite "ar" would nearly always be right. Until this point is settled by philologists, writers will do wisely to adopt "tubercular" to the exclusion of "tuberculous."

Dr. Haffkine, a Russian pupil of Pasteur's, has been giving a lecture in London on his work in India, where he spent twenty-nine months carrying out a series of preventive inoculations against cholera. His system is based on the employment of a modified virus or vaccine, and is therefore analogous to Pasteur's work with regard to rabies, or Jenner's method for smallpox. It is not a "variolization"—which is simply the inoculation of the poisonous material direct from a patient affected with the disease. This latter was the plan tried by Dr. Ferran, in Spain, in 1885, with such disastrous results that its continuance was forbidden by the authorities. It was, if I mistake not, "variolization" which was introduced from the East by Lady Mary Wortley Montagu as a protection against smallpox, and which was the forerunner of Jenner's modified virus. It is well to bear in mind, as the number of these animal extracts increases, that Haffkine's method does not come under the heading of serum-therapy. Treatment by antitoxins cannot be used as a preventive treatment, as their effects on the system are rapidly worn out. However, with regard to the trial of the anti-cholera serum, Dr. Haffkine intends putting it to the test during his forthcoming visit to India. With reference to what he has done with the preventive inoculation, he expresses himself as quite satisfied with it, and quotes the following opinion of Koch himself: "The demonstration is complete; the protective power of the method is established finally by the observations collected in India up to now; further perfection and simplification may be possible, but the main question at issue, the chief part of the problem, is solved by the facts recorded in your report to the Government of India."

The debate at the Royal Medico-Chirurgi-

cal Society on "The Possibilities as to the Latency of Parasitic Germs or Specific Poisons in Animal Tissues," suffered somewhat from two defects. One was the inordinate length of the remarks of some of the four Fellows who introduced the subject, and the other was a certain want of clearness as to the meaning of the term "latency." This latter want of clear and limited definition allowed the discussion to wander too far afield, many of the speeches being taken up with pointing out the difference between latency and incubation, or between latency and arrest; while further indefiniteness was given by the division of latency into "real" and "apparent," and by the suggestion that the disease might be latent while the germs were active. Still, many interesting and suggestive points were brought out. Clinically it was pointed out that injury, cold, puberty, etc., seemed to bring the latent germs into action. Sir William Broadbent remarked that influenza had in the last five years so frequently ushered in typhoid fever that it seemed probable that the typhoid germ, being latent in the body, had been able to multiply when the resistance of the host was impaired by influenza. Another speaker remarked that the causes of latency were various even for the same micro-organism; the malarial germ was not killed, but rendered latent, by quinine; similarly, improved health and vitality of the host rendered the malarial organism latent for the time. The same was true of fungi, as was shown by a form of itch in the scrotum, due to fungi which remained latent in the cold season and became active in warm weather. Similar instances were referred to from the experience of the laboratory. The demand of the diphtheria bacillus for an alkaline pabulum is well known, and the conditions of latency and growth of various organisms need not be referred to. It would seem that the wave of interest which has passed from the bacilli to their toxins, and thence to their antitoxins, would now pass on to the study of the why and the wherefore of the conditions of latency both in the test-tube and in disease. The length of time which pathogenic organisms may remain latent in the human body has been definitely shown by some observations of MM. Le Gendre and Pochon (Société Médicale des Hôpitaux). For fifteen months they have kept under observation a child who has had three attacks of diphtheria in less than three years. During these fifteen months the Klebs-Loeffler bacillus has been looked for thirteen times, and on each occasion it has been found. When copious nasal douches of an antiseptic are given, the bacillus disappears completely or partially, but when discontinued the child suffers from malaise, and on examining the nasal mucus the micro-organism is again detected. It is evident that this is a well recorded instance of latency both in the germ and the disease. It is well worthy of note that of the three attacks of diphtheria the nose was affected on two occasions, and the greater persistence of the germ in the nasal cavity shows what shelter this cavity in unhealthy conditions may afford to germs. It bears out, also, the clinical experience of the greater gravity of diphtheria when affecting the nasal fossæ. It would be of much interest in this case to know if the child suffered from nasal obstruction, or any affection—other than the diphtheria—of the naso-pharynx.

A recent debate at the Pathological Society shows the confusion which still exists with regard to the diphtheria bacillus. A paper was read embodying a large amount of work, and concluding by the classification of this micro-organism into four varieties. 1. The long Klebs-Loeffler bacillus: pathogenic for guinea-pigs, and found in severe cases of diphtheria. 2. Short diphtheria bacillus (described in detail for the first time): pathogenic for guinea-pigs, but soon losing this character; associated with mild cases of diphtheria. 3. The short pseudo-diphtheria bacillus: never pathogenic to guinea-pigs; widespread and found in many cases of tonsillitis, catarrhal conditions, etc.; affections with this bacillus *per se* were never fatal. 4. Bacilli resembling the long Klebs-Loeffler, except for slight clubbing and more definite segmentation: non-pathogenic to guinea-pigs; caused no apparent hurt and were possibly non-pathogenic forms of the long Klebs-Loeffler bacillus. In the discussion which followed it was argued that length or clubbing of the bacilli gave no evidence as to virulence. While one speaker held that the only proof of virulence was to be obtained by seeing the effect of animal inoculation, another held that this was no guarantee and quoted in support Koch's experiments with cholera bacilli. Others pointed out that several of the varieties were found in a single case, more especially if several cultures were made; and while all seemed agreed that the term "pseudo-diphtheria bacillus" should be abandoned, many were of opinion that a case should always be reported as diphtheria even when this organism only was found.

A recent magisterial decision raises the hope that England may not continue to be the happy hunting-ground it has proved for quacks of all descriptions. An individual styling himself "M.D., U.S.A." has been fined one hundred dollars, and fifty dollars costs, for practicing without a proper diploma. At first there was some difficulty in getting the magistrate to grant a summons, as that legal worthy held that there was no evidence to show that the man was not what he represented himself to be. It is noteworthy that this case was carried through by a body of medical men, the Medical Defense Union. In any other European country the protection of the public devolves upon the State. However, a "precedent" has been created, and in law that would appear to be a mighty factor.

The Relations of our Profession with the Public was the subject of an address given by Dr. Burney Yeo to a students' medical society, and republished by him in last month's *Nineteenth Century* under the title of "Medicine and Society." It will be found to contain many interesting anecdotes told in an easy style, but it has raised a good deal of criticism as to the truth or wisdom of suggesting that society is beginning to "resent the increased costliness of medical and surgical help." Such a statement in a lay journal, it is pointed out, is apt to be applied in a general sense to encourage the ingratitude of the public. As a matter of fact, such a charge as is implied in the above quotation can only refer to the "guinea-pigs" amongst us, who are certainly no more numerous than in any other walk of life. Again, on the vexed question of "medical etiquette" Dr. Yeo suggests that we are almost too rigorous with regard to publicity in the general press, while we permit the "intra-professional advertising" under the cover of the writing of articles and books. With the Bar the opposite holds good: the names of barristers are frequently appearing in the daily press, but, although this form of advertisement is allowed them, any direct attempt to bring themselves to the notice of solicitors—a performance which is colloquially referred to as "cuddling the solicitor"—is regarded as an unprofessional proceeding. The *British Medical Journal* denies the parallel, and at the same time points out that the writing of a book for the edification of the solicitor is almost invariable amongst men who would rise at the Bar.

That Keats was a qualified member of our profession is definitely proved by Dr. Wilks in the *Guy's Hospital Gazette* of November 9. It is well known that one of the reasons for the poet's abandonment of the practice of the profession was his lack of nerve for surgery; but he himself gives as another objection: "I know that I could not take the fee!" This feeling is not so uncommon, especially amongst young beginners, as some scoffers would have us believe. Fortunately this repugnance is generally quite overcome by habit. It is hoped that Guy's Hospital will not neglect to honor so famous an alumnus, or—as in so many other cases in this country—it may be left to some American admirer of the poet to put up a tablet to his memory.

While on the subject of memorials I would refer to the movement to commemorate Professor Huxley, that staunch defender of truth, justice, and mercy, who declared that the only remedy he believed in for the physical and moral sufferings of the world was "veracity of thought and action." Politics, literature, science and art were all represented at a recent meeting of the general committee when an Oxford don declared that Huxley's prose took rank with the best and purest of English literature. It has been decided that the memorial shall take the form of (1) a statue to be placed in the Natural History Museum, beside those of Darwin and Owen; (2) a medal in connection with the Royal College of Science; and that (3) the surplus shall be devoted to the furtherance of biological science—*i. e.*, probably, by the establishment of scholarships. Subscription lists are to be opened on the Continent and in the States. At his own request the following lines by his wife have been placed over Huxley's grave:

"And if there be no meeting past the grave,
If all is darkness, silence, yet 'tis best.
Be not afraid, ye waiting hearts that weep,
For God still giveth his beloved sleep,
And if an endless sleep He wills—so best."

PARIS.

For the last two months and over, as happens every year, the world of medical students in Paris has been excited over the competitive examinations for the places of hospital externe and interne. Not that the examination for externe is very important; it consists in speaking for five minutes, after five minutes' reflection, on a subject in anatomy (such as, upper third of femur, inferior maxillary, or relations of heart), and five minutes' further

speech on a subject in medicine or surgery (symptoms and diagnosis of acute lobar pneumonia, enteric fever, erysipelas, or venesection).

This year 307 externes were received, being named for three years, during which time they will be obliged to act under some physician or surgeon of the hospitals, taking notes, dressing wounds, or doing any work not considered important enough to call for the intervention of the interne or the physician or surgeon himself.

The internate is a more serious affair. In a certain way it corresponds to the position of house physician or house surgeon in an English hospital, but with the important difference that no qualified man is allowed to assume the post. Taking a degree implies resignation. All externes, except those just entering upon their functions, are obliged to compete for the internate, under pain of losing the appointment of externe.

The candidates, who for many days have been preparing themselves, assemble in a large hall at the Hôtel de Ville, where a jury composed of physicians and surgeons belonging to the hospitals, having made out a list of three subjects, draws one by lot, which is to be the subject of an essay to be written during the next two hours, no books or references being allowed. Such subjects are given as: "Describe the mucous membrane of the uterus;" "Give the differential diagnosis of various forms of uterine hemorrhage;" "The diaphragm;" "The symptoms and diagnosis of Pott's disease of the dorso-lumbar region." Usually a certain number leave without handing in any paper, having found the subject too difficult, or fearing to show their ignorance. Thus, this year, of 550 who entered, but 290 completed and handed in their papers. A day or two later, ten are drawn by lot, and read the anatomical portion of their essays before half of the jury, the medical or surgical portion being reserved for the other half of the jury. When this is over, a certain number—this year 150 out of the 290—are declared admissible, and by a second (oral) examination, in which they speak for ten minutes on two subjects chosen in the same way, some fifty or sixty are finally named as internes in accordance with the sum of the marks they have obtained in the written and oral parts of the examination. The next forty or fifty men after them are appointed provisory internes, and take the place of any interne who may be temporarily absent or give up his post; but these latter are appointed but for one year, while the former have a four years' appointment. Internes of the Paris hospitals reside in the hospital, accompany their superior physician or surgeon on his morning visits to the patients, and in the afternoon make a second round of visits alone. They likewise receive and treat any emergency cases, sending if necessary for additional help.

It is to be noted that, everything being so centralized in this country, one may be sure to find among the first dozen or so of internes of any year one or two or even more who will later on occupy the various positions in the official medical world; and it can well be said that the medical student who does not pass through the internate will find further promotion almost absolutely barred. Now and then, but only now and then, is an exception found, as in the case of Dr. Roux, whose work in bacteriology is so well known, and who was neither externe nor interne, nor ever held any official appointment either in the hospitals of Paris or in the Faculty of Medicine.

The number of students at the Faculty of Paris continues to increase. Thus, whereas at the end of the year 1893–4 there were 4547 students for the Doctorate and 527 for the Officiat de Santé (now abolished), on the 1st of October 1895 there were 4897 for the Doctorate and 342 for the Officiat—an increase of 350 for the Doctorate, and 85 less for the Officiat. This increase is due to three causes: first, every year more candidates undertake the study of medicine; second, a greater proportion now come to Paris than formerly, leaving the provincial schools, where they formerly were in the habit of spending their first two or three years; and third, the increase in the number of foreigners who enter here. The latter were but about three hundred ten years ago, and now number over a thousand. They come principally from Russia, Servia, Bulgaria, Roumania, and from some of the South American countries. Their presence has lately excited much hostile feeling among the French students, and even among men of higher rank, who felt that when the Faculty of Medicine was so overcrowded their own countrymen should have the first chance. This year, accordingly, by decision of the authorities at the Ministry of Education, all foreigners applying for permission to study medicine in France have been informed that it can be granted only for those entering the provincial faculties and schools. This measure is likely to lead

to a considerable falling off in the number of students coming from abroad. In reality, did they but know it, nothing could be better for foreigners themselves than to study in the provinces, where the number of students is much less, in some cases amounting to but thirty or forty, with from ten to twelve instructors. It is to be noted, too, that the men who come up to Paris after two or three years in one of the provincial schools are better grounded in their work, and succeed better, than those who from the beginning have studied in Paris.

Dr. Albert Robin, whose works on physiological therapeutics are well known, especially on the treatment of enteric fever, has for some time been studying in his wards of the Hôpital de la Pitié the therapeutic uses of glycero-phosphates. He was led to do this by noting the excessive phosphaturia in organic combinations which took place in some forms of nervous disorders, and which he attributed to an excessive katabolism of lecithin.

By a series of experiments he was led to attribute to glycero-phosphates the following physiological actions:

1. Metabolism, both of organic and inorganic matter, is accelerated.

2. Nitrogenous exchanges are hastened, both as to assimilation and disassimilation.

3. Uric acid is relatively diminished.

4. Sulphur compounds are acted upon similarly to nitrogenous ones, and, the ratio of sulphur to nitrogen increasing in almost every case, it is to be concluded that organs rich in sulphur, like the liver, are especially the seat of more vigorous nutrition.

5. Intestinal fermentations are but little affected.

6. The increase in chloride of sodium excreted is a proof of increased appetite, a fact clinically confirmed.

7. There is relative diminution in the disassimilation of phosphorus, and absolute in that of magnesium, both substances belonging pre-eminently to the nervous system.

8. Calcium exchanges are increased, and in this way there is acceleration in the nutrition of the osseous system.

From the physiological conclusions above, Dr. Robin is led to think that glycero-phosphates are not to be employed against this or that particular disease, but against varied morbid elements which indicate the use of the preparation. Thus, in a patient suffering from neurasthenia, with phenomena of excitement and exaggeration of nitrogenous metabolism, glycero-phosphatic medication is contra-indicated. The same treatment would be useful in such a patient with elimination of phosphates greater than that of urea.

Dr. Robin divides the therapeutic indications of glycero-phosphates into four groups:

1. Lowering of nitrogenous exchanges, both in assimilation and disassimilation, as in their oxidation,—comprising: (*a*) one form of chlorosis, with diminution of oxidations, where glycero-phosphates of iron, soda and potash are efficacious; (*b*) chronic gout, in cachectic condition (acute gout is a contra-indication); (*c*) diabetes with cachexia (the same contra-indication as above in florid diabetes); (*d*) obesity with diminished oxidations; (*e*) chronic tuberculosis, with the double object of stimulating the organism and of diminishing the demineralization of the cell, a process which Dr. Robin looks upon as one of the adjuvant causes of the disease; (*f*) chronic Bright's disease, with albuminuria and little urea; (*g*) phosphaturic albuminuria; (*h*) dyspepsia with diminished acidity and gastric insufficiency, after appropriate gastric treatment; (*i*) in those advanced in years suffering from general debility.

2. Cases with insufficient hepatic action, carefully excluding all cases with exaggeration of hepatic processes.

3. The most important group comprises any depraved state of the nervous system, such as: (*a*) convalescence from acute affections, influenza; (*b*) various forms of phosphaturia, with the exception of phosphaturia secondary to hypersthenic dyspepsia with hyperacidity; (*c*) many forms of neurasthenia, where depression or asthenia is the leading symptom,—but phenomena due to excitement are aggravated; (*d*) muscular atrophies of various origins; (*e*) paralysis due to various causes—in this class the medicament has but little influence; (*f*) the lightning pains of tabes dorsalis, tic douloureux, sciatica, lumbago—which are particularly benefited by this treatment, the pains of tabes in seven out of ten patients being either much modified or altogether abolished; (*g*) Addison's disease. In mental diseases or progressive general paralysis no good effect has been observed—in fact, the results have been harmful in agitated patients; but some good effect has been noted in depressed patients suffering from melancholia.

4. Whenever it is desirable to modify the metabolism of the calcium salts, as in many affections of the bones, such as rickets, osteomalacia, fractures, etc.

Dr. Robin administers glycero-phosphates

of lime, iron, soda, magnesia, and potash, either by hypodermic injection or by the mouth. For hypodermic injections he employs from one to ten cubic centimeters, ordinarily one to four, of solutions of glycero-phosphates of lime, soda, or magnesia—the first being a five-per-cent. solution, the second a twenty-per-cent. solution, so that each dose corresponds to from five to fifty centigrammes of glycero-phosphates of lime, and from twenty centigrammes to one gramme (20–100) of glycero-phosphate of soda. The solutions are an exceedingly good culture medium, and should accordingly be prepared and preserved with great precautions.

Dr. Robin informed me personally that he has had for some time under observation a synthetic preparation, the fabrication of which requires three weeks. It would seem to present some advantages over solutions prepared in the customary manner. Dr. Robin will shortly present a communication to the Academy of Medicine, in which he will give a full account of mode of preparation.

If glycero-phosphates are to be administered by the stomach, the doses should be from thirty centigrammes to one gramme of lime, soda, potash, or magnesia salts, administered daily towards middle of repast; and for the iron preparation from ten to twenty centigrammes daily. The following prescriptions are recommended by Dr. Robin:

Syrup.

℞ Glycero-phosphate of lime, 6 Gm.;
Glycero-phosphate of soda,
Glycero-phosphate of potash,
Glycero-phosphate of magnesia, of each 2 Gm.;
Glycero-phosphate of iron, 1 Gm.;
Tincture of St. Ignatius bean, 30 drops;
Pepsin, 3 Gm.;
Malt, 1 Gm.;
Tincture of kola, 10 Gm.;
Syrup of cherries, to make 200 Gm.

A soupspoonful at lunch and dinner, during repast.

As the above syrup is somewhat difficult to prepare, Dr. Robin often recommends the following wafers:

℞ Glycero-phosphate of lime, 0.30 Gm.;
Glycero-phosphate of soda,
Glycero-phosphate of potash,
Glycero-phosphate of magnesia, of each 0.10 Gm.;
Glycero-phosphate of iron, 0.05 Gm.;
Powdered St. Ignatius bean, 0.03 Gm.;
Pepsin, 0.15 Gm.;
Malt, 0.15 Gm.

For one wafer. Two daily, at lunch and dinner, during the repast.

For cases where it is desirable to administer iron, the pilular form is to be preferred:

℞ Glycero-phosphate of iron, 0.05–0.10 Gm.;
Powdered rhubarb, 0.05 Gm.;
Extract of cinchona, 0.15 Gm.

The above doses are to be looked upon as medium ones; excitability or insomnia in the patient is a warning to cease the treatment for a few days, and to begin again with doses reduced one-half.

Whenever economy is especially desired, glycero-phosphate of lime may be administered by itself in wafers, at doses expressed above.

Public excitement over the serum treatment of diphtheria has entirely disappeared, and it may be said to be taken as a matter of course. Here and there in the window of some chemist may be seen a notice announcing that the anti-diphtheritic serum may be purchased within; but it attracts no attention, and has the appearance of always having been there.

The Alberto Levi prize, of 50,000 francs ($10,000), has been divided between Professor Behring, of Marburg, and Dr. Roux, of Paris.

One result of the serum treatment is that more attention has been paid to intubation of the larynx in France than has been the case in previous years; and tracheotomy, which had more than held its ground, is rapidly becoming less frequent.

What the public is now becoming interested in is the anti-streptococcic serum prepared by Dr. Marmorek at the Pasteur Institute. Dr. Chantemesse, of Paris, has been employing it to treat patients suffering from erysipelas. While the treatment of 554 patients by other methods gave a mortality of 3.79 per cent., the mortality under the serum treatment in a series of 501 patients was only 2.59 per cent. A powerful serum administered in small doses is surer than a weak serum administered in large doses. The local, and especially the general, condition of patients was favorably affected. From twenty to forty cubic centimeters was the usual dose. Some surgeons have been using the serum before operating, especially on cases of salpingitis, thus limiting the abscess and preventing its rupture into the abdomen.

A. T. TURNER, M.D. (Paris).

Notes and Queries.

THE FIRST OPERATION UNDER ETHER IN ENGLAND.

In an excellent editorial on Sir Edwin Arnold's address to the students at St. Thomas's Hospital, the *Lancet* calls attention to the fact that the advance of our art which most appeals to him is the discovery of anes-

thetics. The spirit in which the discovery was welcomed in England is well illustrated by the account given by Sir Russell Reynolds, at the University College Hospital dinner in 1888, of the first operation performed in England under anesthesia:

"The first operation in this country performed under an anesthetic was witnessed in University College Hospital. Liston had consented to try the anesthetic. I can see him now as he said to the students: 'Gentlemen, we are going to try a Yankee dodge for making men insensible.' . . . At length Peter Squire said: 'He is quite ready now, sir.' Liston's knife flashed in the air; I took out my watch to count the time, and the leg was on the floor in six-and-twenty seconds. Liston turned to the students and said: 'This Yankee dodge, gentlemen, beats mesmerism hollow.'"

And the *Lancet* remarks: "That was all the welcome given to the first use of anesthetics in England. There was no public rejoicing, no Thanksgiving Day, no Te Deum in the churches, no commemoration of the discoverers; the great discovery had to make its way against obstinate prejudice and folly in high places, even in some of our profession; and Liston's somewhat grudging utterance should serve as a warning to those of us who make light of new methods only because they are new. We are glad that Sir Edwin Arnold saw only the discovery itself, and not the way in which it was received."—*Boston Medical and Surgical Journal*, Nov. 28, 1895.

THE RAY LANKESTER AND FRASER CONTROVERSY.

Prof. Ray Lankester is to the front again. With a great flourish of trumpets he steps into the arena and challenges Professor Fraser, of Edinburgh, to mortal combat on the question of priority in the discovery of the means of rendering animals immune against the venom of the cobra and other serpents. The two combatants are well matched, and are likely to render a good account of themselves.

Mr. Lankester was for some years professor of comparative anatomy at University College, London, and now occupies the honorable post of Linacre Professor of Comparative Anatomy in the University of Oxford. For a very short time, if we mistake not, he served in a somewhat similar capacity in the University of Edinburgh. He is a cool and wary antagonist, and a past-master in the art of controversy. He hits hard, and has a remarkable facility for saying very disagreeable things in very few words. His recent letters to the *Times*, dated from the Athenæum Club, were, if not convincing, at all events excellent models of special pleading.

Prof. T. R. Fraser's record is an equally distinguished one. He is not only Professor of Pharmacology and Therapeutics in the University of Edinburgh, but also Dean of the Medical Faculty. He is probably the most distinguished pharmacologist in Europe, and his elaborate and careful papers on the physiological action of Calabar bean and of strophanthus, not to mention his investigations on the "late tetanus" of atropine, will always remain models of original research. He is universally respected, and it is especially to his credit that, in spite of all temptations, he has refrained from writing a textbook of materia medica for students.

Curiously enough, Professor Lankester takes up the cudgels, not on his own behalf, but in defense of Professor Calmette, of Paris, for whom he claims priority in the discovery of the antitoxin of snake-poisoning. He opens cautiously, and evidently with a full appreciation of the fact that he has no mean adversary to contend with. He is at a disadvantage at the outset, for he is no pharmacologist, and is fighting on ground to which he is unaccustomed and on which with a little want of care he may sustain a nasty fall. He commences his onslaught by stating that he desires to make a simple statement without commenting on the facts, and then proceeds somewhat inconsequentially to assert in very positive terms that the whole credit of the discovery rests with Professor Calmette.

Dr. Fraser's reply, couched in simple and dignified language, must have taken him somewhat by surprise. He points out that no claim of priority has ever been advanced by him; that although his communications have been of the nature of preliminary statements, in which it is not customary to enter into the details of other people's work, he has done ample justice to Dr. Calmette, and that, so far from there being any antagonism between him and the French observer, he entertains the highest opinion of his researches.

It is to be presumed that Prof. Ray Lankester will have something more to say on the subject, but, so far, his efforts have not been attended with any marked success, and the honors of the first round certainly rest with his antagonist.—*Medical Press and Circular*, Dec. 18, 1895.

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Original Communications.

*THE IMPORTANCE OF RECOGNIZING THE VASO-MOTOR SYSTEM AS A FACTOR IN DISEASE IN THE TREATMENT OF CIRCULATORY DISORDERS.**

BY H. A. HARE, M.D.,
Professor of Therapeutics in the Jefferson Medical College of Philadelphia.

I have chosen the title heading this paper because I am convinced that the importance of considering the condition of the vaso-motor system in disease is not appreciated. Either it is ignored entirely, or it is spoken of indefinitely in much the same way that some practitioners refer to the sympathetic system as a cause of an ailment, probably because it is the simplest way of admitting that they don't know what they are talking about. In reality we may, in view of our knowledge of the functions of the vaso-motor system, assert that its integrity is as necessary to life as is the integrity of the heart—the organ to which we pay so much attention in every case we see. A heart may be lamed, yet the man live comfortably, whereas an ill-conditioned vaso-motor system will at once cause distress. This system is made up on the one hand of the vaso-motor nervous apparatus, and on the other of the blood-vessels themselves.

* A paper read before the Delaware County Medical Society, at Chester, Pennsylvania.

It is to be remembered that the tonicity of the arterioles and capillaries offers a resistance to the action of the heart which is as natural as is the atmospheric pressure of fifteen pounds to the square inch on our bodies or in our lungs, and that any variation in this resistance by reason of dilatation or contraction of the blood-vessels is followed by as definite symptoms as ensue when we expose ourselves to rarefied air on the one hand or to compressed air on the other. The resistance offered to the heart by the properly acting vaso-motor nervous system, through its influence on the vessels, is identical with the friction offered to the driving wheels of a locomotive. The locomotive is meant to meet and stand this resistance, and if the resistance is removed by slippery rails the wheels fly around ineffectually, racking the machinery and destroying its usefulness. On the other hand, if the hill be too steep, the resistance is too great and the engine comes to a standstill or blows out a cylinder-head, though before such a thing occurs the mechanism is much embarrassed, as is evidenced by the heaving impulses of the draught.

From this we learn some important diagnostic and therapeutic facts: first, that a rapid pulse may be due in no way to a disordered heart, but be due to vaso-motor relaxation; and second, that the proper way of treating this rapid pulse is to put sand on the track and increase the resistance, and not to make more steam—or give digitalis—which will only make the engine, or heart, work away on slippery rails with more wear and tear and make no progress.

Conversely, if a heart seems to be laboring against a high arterial pressure, the most sensible thing for us to do is not to stimulate this organ to increased and exhausting effort, but to eliminate the resistance offered by the grade, by making a cut, through which the heart may pump its way with normal resistance. This we do by the use of vaso-motor relaxants, such as the nitrites, or by bleeding. Much of the reputation of nitroglycerin as a cardiac stimulant rests on the fact that under its influence excessive arterial resistance is removed and the heart has a chance to perform its work properly without direct stimulation.

When we consider the enormous space offered by the capillary area when it is relaxed, for the flow of blood or its stagnation, the facts I am endeavoring to emphasize become even more impressive.

It seems proper, therefore, that in every case to which we are called for heart trouble we should examine the tension of the blood-vessels before prescribing for the heart itself.

Let us take for study severally conditions familiar to us all, in which the heart is in reality intact and the vaso-motor system really at fault, yet in which the heart usually gets the credit for the trouble. The most frequent of these is ordinary shock, in which, after the early inhibition of the heart by the irritated vagus (a state we rarely see, because we do not see the patient soon enough), the entire group of symptoms indicates vaso-motor relaxation in the soft radial pulse, the cold, wet, leaky skin, and the bloodless surface. Under these circumstances the heart beats fast and abortively to fill the yawning blood-paths, which have many times the area it is capable of filling, and soon fails from exhaustion.

Again, we frequently see attacks of tachycardia in which the heart, though strong and able, beats with excessive rapidity, resistance having been suddenly removed by vaso-motor relaxation, as shown by the tension of the pulse. Frequently in nervous, hysterical women, sudden flushings or vaso-motor palsies produce tachycardia.

Another state more like that of shock than those just named is the vaso-motor relaxation of advanced acute diseases, such as typhoid fever or pneumonia, particularly the latter. Every one of my hearers must have seen cases of pneumonia in which after the crisis there developed a rapid running pulse with collapse and profuse sweating, with gasping breathing. Undoubtedly this state is partly due to the heart being exhausted by its work, and the loss of its stimulation caused by fever, but a large part of the symptoms are really due to the vaso-motor relaxation.

Another evidence of general or local vaso-motor relaxation is to be found in certain types of what has been called functional albuminuria, in which there is relaxation of the renal vessels so that they become engorged with blood and "leak albumin," to use a common phrase. Sometimes this state is due to heart-failure, but often to vascular atony.

Last of all we find more localized vascular atonies, such as are seen in certain cases of pelvic, respiratory or bronchial attacks of congestion or hyperemia, and which are sometimes provocative of severe colds or inflammations or the peculiar changes seen in their more severe forms in Raynaud's disease.

On the other hand an equally familiar type is the man who, by reason of renal disease or asthma, or both, develops a hypertrophied, over-active heart, with slow pulse and heaving impulse, as the result of the greatly increased arterial pressure against which the heart is laboring—in other words, develops an arterial tension in which the heart is overwhelmed by resistance or undergoes sudden and fatal or more slow and equally fatal dilatation of its walls.

It is wretched therapeutics to whip up such a handicapped heart by cardiac stimulants; you are simply exhausting the already fagged horse by whipping him up to greater, but temporary, effort.

Again, in the presence of dropsy we are apt to ignore the physical forces concerned in its development and the state of the vascular system, relying almost entirely, aside from efforts for its removal, upon cardiac and renal drugs, and ignoring the leaking vessels which produce the difficulty.

It will be remembered that dropsical exudation takes place from the capillaries, and that the integrity of the walls of the blood-vessels and lymphatics depends upon normal nutrition, or, in other words, upon a proper blood-supply. As a consequence, dropsy may be due to relaxed or poorly nourished vessels as much as to any other cause.

The force exercised upon the column of blood as it is driven out by the heart into the aorta may be considered as the chief support of the capillary circulation, so that if the heart be weak the pressure falls in the arteries, and the rapidity of flow is decreased in the capillaries in consequence, while, on the other hand, an increased cardiac activity hastens the capillary circulation. As the arterial pressure and force depend not only upon the heart force but also upon the tonicity of the arteries which carry the stream, it becomes evident that dilated arteries must lower blood-pressure even if the heart be strong, although practically the heart and vaso-motor system generally fail or increase in tone together. We find, therefore, that either a weak heart or a relaxed artery tends to cause stagnation of the blood in the capillaries, and having found that such stagnation is productive of exudation it is not hard to discover why low arterial pressure is a cause of dropsy.

Having shown this to be true, let us turn to an explanation of the fact that a high pressure in the *veins* is productive of the same changes.

Here the normal pressure is almost nothing, being much less than in the arteries, and considerably less than in the capillaries. The result of this is that in health the blood flows rapidly from the high pressure of the artery to the low pressure of the vein, and passes through the small veins under a gradually decreasing pressure until it reaches the heart. Any obstruction to this venous flow must increase the venous pressure, and, the venous pressure being increased, the rapidity of flow through the capillaries must be decreased. The whole subject may be made more clear by the following example:

Supposing that two iron tubes are connected at one end by several lines of rubber tubes (the capillaries), and that water is flowing into the first tube, or the artery, under a pressure which is represented by the figure 100, while the resistance to the flow in the second tube, the vein, is represented by the figure 0. It at once becomes evident that the rapidity of the flow through the connecting rubber tubes will be very great, whereas if the pressure in the first or arterial tube is decreased to 50 the rapidity is decreased one-half, or if the pressure in the second tube be increased to 50 instead of remaining at 0 the same changes will occur,—in either instance capillary flow is lessened and exudation is caused. This is the pathology of dropsy. Now let us proceed to discover the causes of dropsy in various diseases.

In cardiac disease it is due to a weak heart being unable to supply the arteries with enough blood to maintain the normal pressure, or to a damming-up of blood in the venous system as the result of the imperfect emptying of the cardiac cavities. In the first instance low arterial pressure produces dropsy; in the second, high venous pressure has a similar effect.

In renal troubles the dropsy depends more upon the lack of proper nutritive processes in the capillary-walls and upon changes in the blood-pressure than upon other causes. If the kidney is diseased it may not be able to eliminate the proper quantity of liquids, which accumulate and finally escape into the tissues, while the same failure in renal function causes disease of the blood-paths themselves, and often produces cardiac complications.

Hepatic troubles cause dropsy by producing pressure upon the large blood-vessels going to the liver, and in consequence the exudation is generally confined to the lower limbs and abdomen. If the hepatic trouble be severe, some failure in the nutrition of the

blood-vessels and changes in the quality of the blood may ensue.

Pulmonary disease rarely causes dropsy unless the venous pressure is greatly increased and productive of cardiac dilatation, or, as in phthisis, where the changes in the nutrition of the body involve the blood-vessel walls and the blood.

Having considered the conditions of vasomotor relaxation and spasm as etiological factors in the development of circulatory changes, we come to the study of what we can do for their relief.

Let us take up the therapeutics of vasomotor relaxation. Here we find belladonna our standby and mainstay. I am as confident that I have saved life by its use in shock and in the collapse of acute disease as I am satisfied that I am here to-night. One case in particular always stands in my memory as a type of how much good these drugs may do. A child of five years, having passed through the earlier stages of pneumonia, rather uneventfully arrived at the period for crisis. On the day that crisis occurred it sat up in bed for an instant, although the pulse was already weak from the fall in fever, and at once called out, "Light the gas, it's getting dark," and then passed into profound collapse. The case was a desperate one, and, in addition to external heat, I gave hypodermically $\frac{1}{60}$ grain of strychnine and $\frac{1}{200}$ grain of atropine every fifteen minutes, till three doses were used, when the child showed signs of renewed vitality, became flushed from the atropine, and eventually recovered without any further symptoms of note.

The good results following the use of belladonna in such cases have impressed themselves upon me again and again, and the resident physicians in the wards of which I have charge have repeatedly noted the change for the better on the use of the drug. One, at least, has contributed to the THERAPEUTIC GAZETTE a report of the cases treated by this means, with the most happy effect.

There are other facts, in regard to circulatory changes produced by vascular dilatation, which are not to be overlooked. The most important of these is the peculiar capacity for holding and requiring large amounts of blood which the muscles possess. We all know that sudden or prolonged exertion makes us "out of breath" and causes more or less cardiac disturbance. At first this cardiac difficulty evidences itself in labored effort of the heart, because in the early period of muscular contraction the resistance offered to the flow of blood through the muscles is enormously increased. Very soon, however, we develop what has been called the "second wind"—which is not wind, but vaso-motor equilibrium. The muscle, at first anemic from squeezing blood out of itself, soon requires an excess of blood to nourish it under prolonged strain, and its blood-vessels dilate widely and become congested. The opening of these blood-paths relieves the resistance offered to the heart, and this organ therefore pumps blood without difficulty during the remainder of the exercise.

In these facts we have an explanation of sudden deaths occurring in cases of heart disease under exertion. The man with marked cardiac asthenia and dilatation falls dead when the resistance in his vascular system produced by exercise results in paralytic distention of his ventricular walls. Or the man with cardiac hypertrophies associated with aortic regurgitation drops dead on exertion because the pressure makes a greater regurgitation than is compatible with life. Finally we hear of cases where the man has not fallen dead while exercising, but afterwards—that is, when his heart, exhausted by effort, suddenly is called upon to supply widely opening blood-paths after brief effort.

Ludwig has estimated that as much blood flows through the muscles as through the skin and internal organs together, and muscular action is therefore clearly of great effect on the heart. Brunton has well said that by reason of this intimate association between heart action and vascular tension life is maintained, for, "As a rule, whenever the pressure rises in the arterial system, its increase acts as a stimulus to the inhibitory roots of the vagus, and thus slows the pulse. Less blood is thus sent into the aorta, and the tension within it is brought to the normal and kept there. On the other hand, when the arterial pressure falls the ordinary stimulus to the vagus roots is diminished, the heart acts more quickly, and the tension in the aorta is thus again brought up to the normal. Besides this, whenever the tension becomes so great as to inconvenience the heart, the sensory nerves of this organ bring into action reflexly a mechanism for dilating the vessels. In the rabbit these sensory fibres pass upward from the heart as a distinct nerve, the depressor nerve, and when stimulated they cause great dilatation of the vessels in the abdominal viscera, so that the blood-pressure falls at once."

The exact situation of these nerves in man

has not been ascertained, but in all probability a similar mechanism exists. The pulse-rate in health thus depends to a great extent on the pressure within the vessels. In disordered conditions of the nervous system it may vary to a great extent independently of this.

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*THE TREATMENT OF CANCER AND SARCOMA BY FORCED ALIMENTATION AND THE USE OF THE TOXIN OF ERYSIPELAS.**

By B. H. Detwiler, M.D.,
Williamsport, Pa.

Instead of going into details of form and variety, I shall for the present be content to classify cancers as hard and soft, or acute and chronic. These again are subdivided as they meet us in our daily work: some are operable and others inoperable. Cancers are due to local irritation and are composed of incomplete or dwarfed cells, as shown by the small round cells and the spindle-shaped cells. You will recall the fact that all cell-growth is due to cell-division, either directly or indirectly, and by the multiplication and specialization of each cell all the tissues of the body develop under control of the more highly specialized tissues of the nervous system. Thus all tissues are formed and replaced, and the effete matter broken down and eliminated. These incomplete or dwarfed cells multiply as rapidly as normal cells, push themselves through the basement membrane in all directions, and, carried by the circulation, are rapidly disseminated. Carcinomata are distributed by the lymphatics and are more circumscribed; hence at an early stage they are more readily removed.

Inoperable cases are the opprobrium of the profession. Some years ago Dr. Coley, of the Cancer Hospital of New York, noted with others that inoperable cases, especially sarcomata, would recover if the patient was fortunate enough to have an accidental attack of erysipelas. Taking this experience as a cue, he secured serum from a fatal case of erysipelas, and propagated from it a toxin that has produced wonderful results under his skillful care at the New York Cancer Hospital. It is remarkable that other equally skillful men elsewhere have not been so fortunate.

A year ago I saw in New York a number of inoperable cases of cancer, and especially sarcomata, restored to health by the use of these toxins. One case I recall of a young girl who had a sarcoma of the foot, which had been removed by amputation at the ankle in the New York General Hospital. There was a recurrence at the stump and in the popliteal space, and after an attempt at enucleation, as shown by the cicatrix, the case was given to Dr. Coley in preference to amputation of the thigh at the hip. Thirty days' treatment by toxin of erysipelas removed every trace of it. Other cases equally remarkable demonstrated the power of this toxin in his hands.

After careful and conscientious trials in private practice and in the wards of the Williamsport Hospital, it has not proved satisfactory in my hands. I shall detail more fully my experience in several cases that have been under my care, at the close of this paper.

The study of cancer by scientists has as yet produced no positive results, but there is no doubt that in the near future a substance will be produced that will render the system as immune to cancer as antitoxin does to diphtheria. The low-grade cells—or, more properly, the incomplete or dwarfed cells—must be eliminated, and a higher-grade cell substituted. Were this practical, by substituting a cell of higher vitality, there would be no difficulty in curing any form of cancer.

In my efforts to produce this effect, though they were futile, there were some remarkable results that I will relate.

Mrs. K., aged forty-three, mother of three children, had a cancer of the breast removed by Dr. Nutt in the spring of 1893. It had developed after the nursing of her youngest child nine years before. After recovering from this operation, she frequently rode rapidly a hard-stepping horse for hours at a time. This at last was followed by a sharp pain in her back and leg, resembling sciatica. She had suffered long when I was called in consultation; a local lesion of the spine was apparent, which was not rheumatism, but either Pott's disease or cancer, probably the latter. The continued, unremitting pain, with inability to move the body, taxed the combined skill of Dr. Nutt, Dr. Saylor Brown, and myself. In the uncertainty of the diagnosis a plaster-of-paris cast was made under extension, and a leather brace applied, which disappointed us. Extension in bed by weight to the head and feet gave little relief.

Dr. William Pepper was called in, who diagnosed the case properly, although ex-

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* A paper read at a meeting of the Lycoming County (Pennsylvania) Medical Society, Dec. 3, 1895.

amination was difficult because of the pain caused by movement, so that he could not see her spine, but felt the protuberance of the twelfth dorsal vertebra by insinuating his long thin hands under her body. His diagnosis was, cancer of the spine by metastasis from the breast, with a renewal of the disease in the cicatrix of the breast; an early fatal termination was prognosticated.

The suffering continued, being only partially relieved by morphine, and the general condition remained about the same. A more firm extension was made from the head and feet, and hypernutrition instituted in the form of large quantities of concentrated peptonized liquid food, with from one to two pints daily of a very superior old port wine, independent of the usual food. In less than a month her general appearance had improved wonderfully—cheeks were filled out, body and limbs rounded up, and she was the picture of health, without a particle of cachexia; moving her from side to side and rubbing her back caused but little pain; the morphine had been largely reduced in quantity, and the hope was entertained that the diagnosis of Dr. Pepper was an error of judgment, as the cicatrix of the breast did not break down as with a returning cancer. Then the power of assimilating food partially failed her, and for some time she was unable to take the usual amount. Later she regained her appetite, but was unable to continue the course of hypernutrition which had promised so well, but which was unfortunately continued too long.

Weeks and months passed by, then Dr. Donellan was called in consultation. He had a better opportunity of examining the case than Dr. Pepper had had; he considered it Pott's disease, with a possibility of cancer, as it was not probable that Pott's disease would follow from a cancer of the breast; but as there had been no microscopic examination made of the breast tumor, it was barely possible an error of diagnosis had been made, especially as the general health had improved and the large amount of morphine that was necessitated by the disease had been reduced to a fraction of a grain daily.

Arrangements had been made to place her in a plaster-of-paris splint and then on a chair, at the same time keeping up an extension of the head and shoulders by the high-back chair, when a local surgeon, by ways that were peculiar, secured the case, placed a leather brace upon her that he had made from a plaster cast, and directed her to sit up without any support. Immediately there was intense pain, which continued forty-eight hours, and was followed by paralysis of the limbs with total anesthesia. In a month an autopsy was held—at which I was present—disclosing a fracture of the spine and a pressure on the cord that had produced paralysis. There was now no question but that it had been a cancer; and the spinal cord, with a full history of the case, was sent to Dr. Pepper. Her improvement, after so distinguished a physician as Dr. Pepper considered her case limited to thirty days, led Dr. Donellan to believe it a case of Pott's disease in spite of his belief that this disease could not follow from a cancerous breast, and in view of the ability of the patient to have her morphine reduced to a fraction of a grain. We entertained also the expectation that the improvement would continue if she could be relieved of the irritation of extension and be placed safely on a chair braced by a plaster jacket; but the unfortunate change of physicians, followed by the fracture of the spine, confirmed by an autopsy, put an end to any possibility of the kind.

This case demonstrates the value of hypernutrition; not that it will eliminate those low-grade aborted cells that produce centres of irritation and cancer, but it crowds them back for the time being, and when the system can no longer stand the high pressure and in this way resist the encroachment of these aborted cells, it succumbs rapidly.

This is demonstrated in the case of Mrs. B., aged forty-seven, who was a large, fleshy woman, mother of ten children, admitted into the hospital Sept. 25, 1894, for cancer of the uterus. On the 26th she was placed under ether for hysterectomy by Dr. Nutt. We found the broad ligament involved, so merely curetted the cavity of the fundus, as the neck of the uterus broke down under the curette, and freely cauterized it. On Oct. 5 she left the hospital. She was placed under the local action of methylene blue, which produced no favorable results, rather aggravating the disease. The different arsenical pastes were used, without beneficial effect. Finally she was placed under large doses of digestants and old port wine, with local applications of pepsin and salicylic acid. This improved her general health wonderfully, and the local disease improved to such an extent that I reported the case in January, 1895, as an anomaly due to this plan of treatment, and I was confirmed by Dr. Nutt. Subsequently there were improvements and

depressions. She finally died of exhaustion following a rectal abscess involving the gluteal region, due to septic infection more than to encroachment of the disease into the neighboring tissues. From the distress in the epigastrium I felt assured there was a carcinomatous deposit in the stomach, though an autopsy could not be secured. She died Sept. 25, 1895. I had tested hypodermically the erysipelas toxin for some time; it produced the chill and fever, but I never saw any beneficial change.

Mrs. B., of this city, aged forty-seven, had a tumor of the breast that was removed by Drs. Koser and Rich in 1894. It never made a good union, leaving an ulcerated surface with involvement of the other breast. When she was pronounced incurable by Dr. Koser, I gave her the advantage of the treatment of the toxin of erysipelas for two months. It produced its characteristic effects, chill and elevation of temperature, with some improvement — nothing decided; but three months after the toxin had been used I found that the disease had not made any decided encroachment. She has no cachexia, but there is a slight loss of flesh, with the arm action impeded by encroachment of the growth into the axilla.

Mr. H., painter, quite aged, was admitted to the hospital Dec. 28, 1894, with an immense sarcoma of the liver. The case being hopeless, he was given an injection of toxin hypodermically, which produced a slight chill, followed by low temperature. In a week it was tried again, with the same result. He never regained his normal temperature; in fact, the use of the toxin may have expedited his transfer to the beyond.

In May, 1895, Mr. E., a charge from Clearfield County, was placed in the ward, with a rapidly growing sarcoma of the neck. He was operated on by Dr. Youngman. There was so much hemorrhage, with sarcomatous infiltration of the deep arteries and nerves, that the growth was not enucleated. Repair was made in due season. The toxin injections produced no effect on him, and he lived only a month.

These cases, barren of results, show that inoperable malignant growths have not yielded to the erysipelas toxin under my care as did the cases of sarcoma which I saw in the New York Cancer Hospital under the care of Dr. Coley. I was pleased with the marked improvement produced by hypernutrition, and believe that we may expect good results from it, probably only temporary; but for specific treatment we will have to wait till the toxin of cancer is fully demonstrated, which I believe will be in the near future.

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*THE TREATMENT OF TYPHOID FEVER BY COLD APPLIED TO THE ABDOMEN.**

By A. J. Downes, M.D.,
Philadelphia, Pa.

It is a difficult task to make interesting so trite a subject as the treatment of typhoid fever. In general practice, where the bath system is not much used and its striking results not obtained, the mortality rate from this disease is much too high. I have a treatment to present, which can be used anywhere, is easily managed, rational, and so efficient that I feel certain it would give as good results in a large series of cases as does the Brand method.

Referring briefly to pathology, typhoid fever is conceded to be a strictly infectious disease, with distinct local lesions almost invariably found in the lower ileum and the beginning of the colon. The enlarged lymphatic glands found are those in connection with this part of the intestines, and are located behind or near it. The infecting causative process must be most pronounced in this part of the bowel. It would seem, therefore, but logical to act on the disease here at its source, to inhibit if possible the growth of the lesions, the generation of toxin and its absorption—in other words, to attenuate the infecting process.

The treatment I advocate consists in the application of cold to the abdomen by means of ice-bags over the lower coils of the ileum and the beginning of the colon, for the longest periods and with the shortest intermissions consistent with safety; the object being to obtain as low and constant a temperature as possible near the lesions and the infecting process. It might be called the systematic continued intermittent application of cold. The continuous use of the ice-bags causes congestion and in time sloughing of the skin, hence the necessity for regulated intermissions.

In six cases ice-bags were applied fifty-five minutes out of every hour for from seven to ten days. The intermission was too short; discoloration of the skin in all, and necrosis of skin in two, occurred. Periods of forty-

* A paper read at a meeting of the Alumni Chapter of the Jefferson Medical College, Philadelphia.

five minutes, with intermissions of fifteen minutes, were found efficient, but I have come to the conclusion that applications of an hour and a half with half-hour intermissions is the best rule to follow, the time on and off making two hours. Should the temperature rise to or above 103° the ice may be allowed to remain on an hour and three-quarters, the time off being reduced to fifteen minutes. In temperatures above 102°, sponging with ice-water and alcohol during the intermission is an essential part of the system; even in moderate fever two spongings daily should be given.

The effects of this method are four:

First, some inhibition of the lesions,—the arterial supply to the bowel is lessened by the stimulating action of cold on the arterioles.

Second, a similar effect on the efferent lymphatic vessels from the lesions,—their calibre is diminished and less toxin is absorbed.

The third effect is the anti-bacillary or anti-infectious influence. Here we are met by the experiments of Prudden that freezing of media containing the bacilli only partly destroys them. Another experiment of his, however, proves that intermittent freezing and thawing continued but a few times (five) completely destroys them. The effect is more pronounced if at the freezing temperature the liquid state is preserved—moist cold. There is an analogy between the effect of freezing bacilli and then thawing them out, and the effect of the intermittent application of cold, as here advocated, over the intestine containing the typhoid bacilli. True, we cannot lower the temperature of the bowel to the freezing-point, but we can reduce it to or below 60° F., and certainly regular reductions to this point with brief elevations to the blood-heat should materially retard the culture process in the bowel. The typhoid bacillus grows at any temperature between 68° F. and 100° F., but best at the latter point. What effect would result in a freshly inoculated tube of typhoid bacilli, were it subjected to alternations between body-heat and cold? Undoubtedly the process would be inhibited and less toxin (and that weaker) would develop. Does cold over the bowel at the seat of the acute process produce no such effect?

The fourth effect is the physical antithermic influence. It is practically cold in contact with hot coils, for the innumerable vessels of the portal circuit may be so considered. Cool blood passes through the liver, and emerges still cool from the hepatic vein; the inferior vena cava is near enough, especially when the abdomen becomes flat, as it does in a short time, to be influenced; hence the blood enters the right side of the heart and lungs more constantly cool than by any other method. This undoubtedly explains the rapid subsidence of the initial and early bronchial symptoms.

The effect on the temperature is two-fold —antitoxic and antithermic.

By this method, since February, 1895, I have treated eleven cases. Four received no medicine until after the subsidence of fever. Six received no medicine that could possibly have much influenced the course of the disease. Not one dose of an antipyretic was given. A little calomel and small doses of a mineral acid were the drugs used. The eleventh case, in addition to the ice-bag, was given the quinine-chlorine mixture of Yeo.

Certain essential facts were deduced during the conduct of these cases. The cold should be applied not less than three times the length of time it is off. Applications of half an hour, with the same intermissions, are useless, for they practically amount to fifteen minutes of cold with forty-five minutes' intermission, and no effect on either the process or the temperature is possible. At times intermissions of half an hour are too long—in one case a chill often came on near the end of the half-hour, indicating renewal of the process and absorption of toxin.

As the effect desired is the lowest possible temperature, while the ice is on the abdomen the water should be as often removed from the bag as the ice melts; otherwise the resulting fluid becomes a medium between the heat of the body and the ice, with loss of cold. The rapidity of melting and the necessity of renewal of ice varies with the height of the fever. When the temperature is near 102° or less, a bag completely filled may not need refilling for an hour and a half, whereas with the temperature 104° the bag may need filling every half-hour. To lose no time, freshly filled bags should be ready. The number of days ice was applied in the cases was as follows: Case I, twenty-one days, including recrudescence; Case II, six days; Case III, twenty-four days, including recrudescence; Case IV, forty-two hours; Case V, twenty-one days; Case VI, seventeen days; Case VII, nineteen days, including recrudescence; Case VIII, six days; Case IX, nine days; Case X, two days; Case XI, ten days. Ice removed in all cases when temperature of 99° or under was reached.

In all except Case VI, delirium, if present, ceased within twenty-four hours after applying cold. The tongues were moist throughout, early chest symptoms rapidly abated, diarrhea moderated, tympany disappeared, moderate fever was maintained. All but one were seen on or before the day of eruption.

Case VI was a neglected one, seen on the ninth day with a fully developed eruption, profuse diarrhea, profound delirium, immense tympany, nose-bleeding, severe cough with muco-purulent expectoration, temperature 105.6°, pulse 116 and dicrotic, sordes of teeth, dry cracked tongue. The only attention the boy had received was some medicine a druggist had sent without seeing the case—a purge. I am not exaggerating the description of the case, which would have tested any method of treatment. The treatment ordered was: ice over the iliac fossa fifty-five minutes out of every hour, and sponging with ice-water during these short intermissions when the temperature was above 102°. Within a week, while there was still some delirium and slight subsultus, the tongue was moist, the chest clear, cough absent, diarrhea controlled, abdomen flat. The ice was applied seventeen days, and the case convalesced without sequela.

Case X was certainly somewhat unique. J. M., age seventeen, brother of Case VI, had been sick a week. I found him with diarrhea, tympany, tenderness in iliac fossa, nose had been bleeding, some bronchitis, pulse 110, temperature 103°. The eruption came out on the following day. Ice was applied fifty-five minutes out of every hour for two days, when a normal temperature was found and the cold stopped. The temperature continued to descend, the morning range varying from 96° to a fraction above, the afternoon from 96° to 97.4°, for nine days after the removal of cold. It then returned to normal, as did also the pulse-rate, which during this period had been as low as 48. By accurate count the normal temperature was regained on the eighteenth day. During the apyretic period fresh crops of eruptions appeared for some days and the characteristic stools persisted. The temperature in the beginning forbids us calling this case one of typhoid apyretica. Did cold abort the disease and cause the low temperature?

In three cases recrudescence occurred. In one it was intercurrent—the temperature had not yet reached normal. In the other two it occurred after at least two days of normal temperature. In each case there was new eruption. In the first case night intermissions of one hour had been allowed.

During the convalescent stage four cases had thromboses—one in the veins of left leg, two in the right leg, and one in both legs at different times. This last, Case XI, had between these thromboses a severe attack of pneumonia in left lung.

Case XI.—D. D., aged forty-five years, a pale, delicate, overworked clergyman, who had lost thirty pounds before being ordered to bed. Until the appearance of eruption a very moderate fever was present, and no treatment but liquid food had been adopted. Ice was now applied, on the eighth day, with the temperature 101°, and continued ten days, during which time the quinine-chlorine mixture of Yeo was given. A maximum temperature of 102° was reached the second day of the ice. Both ice and chlorine were stopped on the eighteenth day of the disease. On the twenty-first day, thrombosis of veins of left leg, with temperature of 104°, occurred; this was rapidly relieved, and a normal temperature obtained in two days. On the twenty-eighth day pneumonia of a severe type supervened, with temperature for two days of 104°, under ice. Crisis the third day—thirtieth of the disease. On the thirty-ninth day the temperature rose, and for five days it continued above 100° owing to thrombosis of right leg.

I call attention to this case to claim that the early management of the fever by ice and chlorine had so conserved vitality that a very bad attack of pneumonia and thromboses of both legs were safely withstood. On no day but that of maximum temperature during first eighteen days was 101° exceeded. For the first twelve hours of pneumonia, heat was rigidly applied to chest, with little result. Three ice-bags at once were then kept constantly to chest for two days, supplemented part of the time by a fourth on the abdomen. The pneumonia disappeared.

Deaths from typhoid occur most often during the second and third weeks. They are rare during the first or formative week. The chief causes of death are perforation, peritonitis, hemorrhage, hyperpyrexia, and exhaustion. Deaths in the fourth week or after occur in cases which have been severe during the earlier periods. Many cases acutely ill during the early period linger for weeks, suffering from the effects of profound poisoning, and after all die finally from some of the numerous sequelæ. The way to avoid death and the distressing clinical features of typhoid fever

is to attenuate the disease process at its focus as soon as possible. One of the very best means, as I conceive it, to accomplish this is by the application of cold to the abdomen over the bowel, the seat of the infection, supplemented as it may be, or rather should be, by the internal use of a well proved intestinal antiseptic. Of the many, guaiacol and chlorine are the best.

It was my intention in this paper to call attention to the systematic use of an old agent—cold—in the treatment of this fever —not to convey the impression that it is at all unusual to treat successfully so small a number of cases as these eleven, but rather to call attention to the clinical features observed in them. Never under other treatment have I seen cases show such uniformly moderate features during the acute process, and it cannot be questioned that the method of treatment was the cause, since some of them were at the start bad cases.

In conclusion I wish to state that the application of ice to the abdomen is not a new thing. The English have used it for a century. Its use, however, has always been symptomatic. I beg for its adoption as a distinct systematic treatment, and am firmly convinced it will render mild all cases in which treatment is begun before the fifth day of disease, and as much influence and as safely guide later cases as any method of treatment. I decidedly believe that cold to the abdomen will retard all infectious disease processes occurring in the bowel if properly and systematically applied.

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*THE HISTORY OF THE COURSE AND TREATMENT OF FOUR CASES OF TYPHOID FEVER.**

By R. B. Watson, M.D.,
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I will briefly present a report of four cases of typhoid fever which have recently been under my care.

The first case was C. B., a colored boy about twenty years of age. He came under my care about the end of the first week of the disease. August 30, I found him up and dressed, with pulse 105, temperature 103°, delirious. I made arrangements to have him removed to the City Hospital, but when we went to his room he had gone out. After a time we succeeded in locating him, and, taking him to the hospital, put him to bed. That night, during the temporary absence of his nurse, in his delirium he jumped out of the second-story window, with nothing on but his shirt. August 31, pulse 120, morning temperature 100.4°, evening 101°. Sept. 1, evening temperature 104°. Sept. 2, morning temperature 104°, evening 105°. About this time he became less delirious, and though inclined to be stupid he was easily aroused and would give intelligent answers to questions. Nothing further of note occurred until the morning of Sept. 5, when a profuse intestinal hemorrhage occurred, with a fall of temperature from 104° to 99°. On the morning of the 6th his temperature had reached 100.6°, but a second hemorrhage was followed by a fall to normal or a little below. Treatment did not seem to have any control over the hemorrhages; he had one to three daily, until he had had nine, when he died.

The treatment in this case was liquid diet, stimulants, cold sponging, and the internal use as well as external application of guaiacol. For the intestinal hemorrhages I used nitrate of silver, with no effect whatever. In fact, all the remedies used seemed to be useless, having no perceptible effect, not even the external application of guaiacol, which did not affect the temperature one-fifth of a degree. This fact I consider remarkable, as from the testimony we have of the effect of guaiacol applied externally in reducing temperature we cannot question its power to do so.

The second case was R. G., aged thirty-four. On October 9 I found him with pain in limbs and back, headache, pulse 86, temperature 100°. As there was a case of typhoid in the same house, I concluded this was commencing typhoid. I ordered him to bed, put him on liquid diet, and gave him a pill consisting of podophyllum $\frac{1}{100}$ grain, calomel, guaiacol carbonate, and menthol, each $\frac{1}{16}$ grain, every half-hour, until his bowels were moved five or six times in twenty-four hours; then changed to a pill in which the guaiacol carbonate was increased to $\frac{1}{8}$ grain, and adding $\frac{1}{16}$ grain of thymol, every two hours. Did not see him again until the 11th; his pulse was then 86, temperature 101°, bowels had been moved six or seven times, stools characteristic of the disease, no tympanites,—expressed himself as feeling well. Saw him again on the 13th; no change in symptoms. In addition to his pill, I then gave a capsule containing guaiacol carbonate 3 grains, thymol 1 grain, menthol ½ grain, and eucalyp-

*Read before the Clinton County (Pennsylvania) Medical Society, Nov. 20, 1895.

tol 5 minims, every three hours, and continued his pills, alternating with the capsules. As he was nearly ten miles from town and seemed to be doing as well as we could expect, I did not intend to see him again until the 15th, but was sent for on the 14th. Found him somewhat tympanitic and suffering very severe pain in the abdomen, but he even then expressed himself as feeling all right except for the pain; his pulse, however, was small and quick. For the pain I gave him small doses of morphine, which relieved him until the afternoon of the 15th, when the pain recurred with increased severity, abdomen became very tympanitic, pulse 130, cold perspiration, hands and feet cold, hiccough, and almost constant regurgitation of a greenish-black fluid. I did not expect him to last through the night, but he lived until the morning of the 17th, when he died with all the symptoms of perforation.

What is interesting in this case is the early stage when perforation occurred. Patient was under antiseptic treatment, such as is recommended by Woodbridge, of Youngstown, Ohio, and claimed by him to abort any and every case of typhoid, especially when commenced in its earliest stage; liquid diet was given, and, before perforation occurred, there was no symptom of severity—movement of bowels was less frequent, pulse less accelerated, and temperature much lower, than in the majority of cases. He had not been sick more than a day or two before the antiseptic treatment was commenced, still it did not prevent perforation, which was the direct cause of death.

CASE III.—Was called to see O. M., aged thirty-two, October 7, 1895. Found him in bed, with red, dry tongue; pulse 100, temperature 102°; some little pain in abdomen, with general feeling of prostration, and loose bowels. He had not been well for about a week or ten days, but had continued at work until Saturday, October 5, and as he was not improving any, but rather growing worse, he sent for me on the 7th. I diagnosed the case to be one of typhoid fever, and ordered Woodbridge's tablets No. 1, containing podophyllum $\frac{1}{960}$ grain, calomel, guaiacol carb., and menthol, each $\frac{1}{16}$ grain, and eucalyptol—one of these tablets every fifteen minutes until five or six evacuations of the bowels were produced in the first and second twenty-four hours. As the patient was ten miles out of town and not very accessible, I did not see him again until the 9th; then he was pretty much in the same condition as when I last saw him; the tablets had produced five or six evacuations. I then, as recommended by Woodbridge, gave him in addition to tablets No. 1, tablets No. 2, which differed from No. 1 only in the quantity of guaiacol carb.—¼ grain instead of $\frac{1}{16}$—and also containing $\frac{1}{16}$ grain of thymol. These tablets were given every two hours, and, as his bowels had not been moved too freely, I continued No. 1 also. I saw him again on the 11th, when his condition was indeed alarming. Through some misunderstanding, after his bowels commenced to move freely the nurse did not stop the tablets No. 1, but continued them with No. 2. His bowels had been and were moving about twenty to twenty-five times per day on the 10th. When I saw him on the 11th, his bowels were moving involuntarily, tongue dry and covered with sordes—not able to protrude it,—pulse 130, and temperature 103°; no tympanites. I stopped both tablets, and ordered the capsules (containing guaiacol carb. 3 grains, thymol 1 grain, menthol ½ grain, and eucalyptol 5 minims) every three hours. In connection with the above, he got milk punch every two hours, milk, and mutton broth, with a sponge bath whenever the temperature reached 102°. On the 13th his condition was about the same, only the bowels were not moved so frequently. On the 14th, pulse being 120 and temperature 101.4°, the capsules were continued, and, as his bowels had only moved twice, tablets No. 1 were ordered to be taken every hour until bowels moved four or five times in twenty-four hours, when No. 2 was to be resumed, alternating with the capsules. His condition improved, and on the 20th the morning temperature was normal, delirium all gone, bowels moved three or four times per day, evening temperature 100.6°. He continued to improve, evening temperature each day becoming lower, morning temperature normal, until the 28th, when he complained of a great deal of pain in his right hip and thigh. From the character of the pain I supposed he was developing phlebitis, and this supposition was confirmed on my next visit, as I then found him suffering intense pain in right leg, which he was unable to move, and which was swollen to the foot; he subsequently went through an attack of phlebitis, with all the typhoid symptoms gone. He had some little elevation of temperature and acceleration of pulse, but the former I attributed to his phlebitis, and the quick pulse to the same cause and to the prostration naturally following the typhoid.

An interesting feature in this case, and one which may have had some bad effect, although I cannot attribute any to it, was that he was covered with a syphilitic eruption and had been for two or three years previously. The eruption improved under the application of mercurial ointment to his leg for the phlebitis, which he insisted was the only thing that relieved the pain.

In this case, was the duration of sickness, not counting the phlebitis, less than that of most typhoid cases? Morning temperature was normal in two weeks from the time I first saw him, but we could not call him convalescent until the evening temperature became normal, which was about the twenty-first day after I was called to the case, but he was ill for a week or ten days before I did see him, so in my mind it is a question if the duration of the disease was shortened by the treatment. The prostration, occurring so early in this case, I believe to have been caused by the excessive action of the tablets; his rapid improvement after the action of the bowels was checked goes to show this, and that they were checked merely by the withdrawal of the medicine, without any opiate or astringent, also shows it.

CASE IV.—Mrs. W., aged sixty. This woman was nurse at the hospital, and took care of Case No. I, and I believe she contracted the disease by eating the mutton broth and other food that the boy left. I was called to see her on October 25, at which time she had been confined to bed three or four days; she said she had not been well for the past two weeks. I found her with pulse 86, temperature 102°, some diarrhea—liquid, ochre-colored stools. I put her on tablets No. 1, as recommended by Woodbridge, for twenty-four hours, and then gave her the No. 2 tablets, and on the 28th an emulsion containing 3 grains guaiacol carbonate, 1 grain thymol, ½ grain menthol, and 5 minims eucalyptol, to the drachm, and gave her a drachm every three hours, alternating with tablets No. 2. The case progressed favorably until Nov. 8, when her temperature was normal and pulse but 86. On the morning of Nov. 9 she was about the same, and I thought she was convalescent, but on the evening of that day she had a profuse intestinal hemorrhage, which resulted in death on the evening of the 10th. The wonder is that this case progressed so favorably up to the 8th of November, as she had practically no nursing.

One fact was apparent in each of the three cases, and that was the absence of tympanites. In Case No. II there was none until after the perforation occurred. Dr. Woodbridge claims there need be no fatal cases of typhoid fever, and says he has had nineteen years' experience in treating the disease and has had no deaths in thirteen years, making use of the treatment that I have tried in three of the cases cited. I believe from the results in these three cases we are justified in concluding that Woodbridge's treatment does not cut the disease short—or, rather, does not abort it—and that it does not prevent hemorrhage nor perforation, nor does it always insure recovery in every case, as he claims. We all have, at different times and with different forms of treatment, treated a number of typhoid cases without a death, and then have lost a number of patients when following precisely the same treatment. From the discussions published lately in various medical journals, and from my own experience, I have arrived at the conclusion that in the beginning of the fever we ought to keep the bowels well opened and thus as far as possible eliminate the poison of the disease; then give some remedy to affect the intestinal walls (almost any of the well known antiseptics); then follow that up with the cold bath, or at least the sponge bath, and repeat as often as necessary to lower temperature. After the second week I do not believe any antiseptic will relieve the intestinal lesion. Professor Osler, in his work on Practice, makes this statement: "The profession was long in learning that typhoid fever is not a disease to be treated by medicine." I would close by saying that there are a great many in the profession to-day who have never learned this fact, and it will take some time and a good many deaths from the disease before they realize the truth of Dr. Osler's statement.

THE SO-CALLED INTESTINAL INDIGESTION.

By W. S. CHRISTOPHER, M.D.,
Professor of Diseases of Children, Chicago Policlinic; Professor of Pediatrics, College of Physicians and Surgeons, Chicago.

The occurrence of flatulence, accompanied by acids, is a clinical phenomenon frequently met. It is customary to speak of this condition as intestinal indigestion of starches. It is proposed to show here that this process is not one of indigestion at all, and that the term "indigestion" is absolutely wrong and extremely misleading. The use of this term

"indigestion" has led to some methods of management of such disorders which are not free from objection. It is well recognized that the condition is dependent upon the starchy and saccharine foods for its maintenance, but it is important to determine its exact relation to these foods.

In the first place, normal digestion of all starches under the action of the normal amylolytic ferments consists in the conversion of the starch into sugar, and for our present purpose it is immaterial to discuss the point whether this resulting sugar is maltose or dextrose, or whether maltose be first formed and dextrose subsequently. In the case of saccharose, cane-sugar, the digestion is accomplished by transforming the cane-sugar into a mixture of dextrose and levulose, commonly called invert sugar. Whatever carbohydrate be ingested, the ultimate end of its digestion is a reducing sugar. In this condition of sugar it is absorbed from the small intestine, because the bulk of the digestion of the starch occurs in the duodenum or small intestine under the influence of the amylolytic ferment of the pancreas.

As a matter of fact, all the sugar so formed in the small intestine is not absorbed. Some of it invariably undergoes further fermentation under the influence of bacteria present, with a resulting formation of various acids and gases, so that there is always present in the small intestine some gas which has originated from the carbohydrate food ingested, and enough acid to maintain in the small intestine an acid reaction, in spite of the sodium carbonate which exists in the pancreatic juice. When the fermentation of gases and acids by the bacteria becomes excessive, the condition is usually spoken of as amylaceous dyspepsia, or intestinal indigestion. None of the micro-organisms, so far as known, which are capable of producing these gases and acids, produce them directly from the starches, but only from the sugars; that is to say, before the abnormal products may be formed, there must first occur a normal digestion of the starches, and the abnormal products are formed from the products of the normal digestion. It is thus clear that the term "indigestion" is eminently improper in this connection. I have elsewhere* called attention to this condition, under the title "Superdigestion," which was used for the purpose of indicating that the process was not indigestion, but rather a further splitting up than occurs even in normal digestion.

Macfadyen, Nencki and Sieber* have succeeded in identifying seven micro-organisms which give rise to fermentation in the small intestine.

The following table, adapted from Gamgee's Physiological Chemistry of the Animal Body, vol. ii, shows the list of these organisms, with their actions upon sugar:

Designation.	Products of Fermentation.
1. Bacterium Bischleri.	Alcohol, Acetic acid, Lactic acid (inactive).
2. Streptococcus liquefaciens ilei vel acidi lactici.	Lactic acid, Traces of alcohol.
3. Bacterium ilei (Frey).	Succinic acid, Lactic acid (active), Alcohol, CO_2 and H.
4. Bacillus liquefaciens ilei.	Traces of alcohol, Traces of volatile acids, NH_3, etc.
5. Bacterium ovale ilei.	Alcohol, Sarcolactic acid, Traces of acetic acid?
6. Bacillus gracilis ilei.	Alcohol, Sarcolactic acid.
7. Bacterium lactis aërogenes (Escherich)?	Alcohol, Succinic acid, Sarcolactic acid, Traces of acetic acid.

Besides these actions, there is reason to believe that the lactic acid may be split up still further under the influence of a butyric ferment into butyric acid, carbonic acid gas, and water. Such alcohol as is formed may also undergo the acetous fermentation, and the resulting acetic acid be subsequently broken up, giving rise to carbonic acid gas and marsh gas. In certain of these bacterial fermentations, hydrogen is also evolved. It may be conceded, therefore, that sufficient knowledge exists to assert: *First*, that the normal digestion of the starches, occurring under the influence of the physiological amylolytic ferments, leads to the formation of fermentable sugars. *Second*, that some of these sugars are usually transformed in the small intestine, under the influence of various micro-organisms, into various acids and gases. *Third*, that at times this secondary bacterial fermentation occurs in excess, and constitutes the

* *New York Medical Journal*, Nov. 9, 1889.

* "Untersuchungen über die Chemischen Vorgänge im Menschlichen Dünndarm." *Arch. für Exp. Path. und Pharm.*, vol. 28 (1891), p. 311.

condition known as "intestinal indigestion." *Fourth*, that the term "indigestion" is here improper, and instead the term "super-digestion" should be employed.

This pathology is the same to which I called attention six years ago in the article previously referred to, and the method of treatment based upon this conception of the pathology I have continued to employ during this whole period with the most satisfactory results. In the management of such cases the first step is to withhold from the food of the patient all carbohydrate material, for the purpose of keeping from the offending micro-organisms the material upon which they live. If this process of starving out the micro-organisms be carried out long enough, they must certainly die. After a period of two to four days, carbohydrates may again be allowed, commencing with small quantities, for the purpose of determining whether the small intestine is ready to receive them. If it is not ready, a renewal of the symptoms will immediately occur. It is, however, difficult for patients to refrain entirely from the use of carbohydrate food during long periods, and it is therefore desirable to have some means by which the starchy foods may be administered, and the damage resulting from them diminished or controlled.

I have found a very effective means, indeed, when the abnormal fermentations are limited to the small intestine, in digesting the starch in the stomach, from which organ the resulting sugar is directly absorbed and does not, therefore, reach the seat of the trouble in the small intestine to maintain the unpleasant symptoms. At times very considerable quantities of starches can be thus digested in the stomach. At other times the process is not very successful, but in general a sufficient quantity of carbohydrate can be thus digested in the stomach and prevented from ever reaching the small intestine, to meet all the needs of the patient, while starving the micro-organisms in the small intestine. For the purpose of thus digesting starches in the stomach, it is my custom to administer an active diastatic ferment immediately after meals and before the secretion of hydrochloric acid has reached such a degree as to interfere with the diastatic action. According to Chittenden and Griswold, the presence of 0.005 per cent. of hydrochloric acid increases the diastatic action of saliva, while a stronger acid diminishes it, 0.1 to 0.4 per cent. being sufficient to completely stop the action of the saliva.

Lately the diastase which I have employed for this purpose is Taka-Diastase, in doses of three to five grains of the powder, which has proven more satisfactory in my hands than any other amylolytic ferment which I have ever employed. It has long been known that a diastatic ferment administered in cases of this kind was followed by good results, and this fact has probably still further assisted in maintaining the erroneous opinion that the essential feature of the pathology of these cases was indigestion. It would seem clear, however, that the use of the diastase is not to assist the normal digestion at all, but instead to digest the starches in an unusual place; to short-circuit the carbohydrate, as it were, and to keep sugar from the small intestine without depriving the patient of all carbohydrate food. When abnormal fermentations of sugars occur in the stomach, as they occasionally do, a diastase is absolutely valueless in the management of such super-digestion. Indeed, if it can have any effect at all, its effect will be bad rather than good under such circumstances. It is clear, also, that diastase in some cases may not alone be sufficient to entirely control the situation; it may become necessary to cut down the amount of carbohydrate food allowed.

Furthermore, it is not yet clear under what conditions this fermentation becomes excessive, and, therefore, in some cases, additional factors must be taken into consideration. I have frequently found that abnormal carbohydrate fermentations occur particularly in infants who are subjects of the uric acid diathesis, and I am of the opinion that this diathetic condition plays an important rôle in the prolongation of such cases.

ALUMNOL IN GONORRHEA.

CHOTZEN (*Journ. de Médecine de Paris*, Jan. 12, 1896) holds that alumnol, one per cent., destroys gonococci without increasing inflammation. Bacteriological examination of the discharge shows beyond cavil the inhibiting action of the alumnol upon the gonococci. For anterior urethritis a one- or two-per-cent. solution (ʒ iss) is employed at first six times a day, later three times a day. When the gonococci disappear, the solution is reduced to ¼–½ per cent. In posterior urethritis a solution of from one to five per cent. is instilled, or alumnol ichthyolate is employed in two to ten per cent. In case of urethral or cervical gonorrhea in women, injection of alumnol ichthyolate is employed, also alumnol bougies.

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Leading Articles.

VERATRUM VIRIDE IN PUERPERAL ECLAMPSIA.

Ever since the publication in 1871 of the noteworthy paper of Fearn, in which he highly praised the administration of what we then considered heroic doses of veratrum viride in the treatment of puerperal eclampsia, the profession has been giving this method a larger trial each year, and the results of this increasing experience seem to endorse even the enthusiastic views of the originator of this method. As long as eight years ago the THERAPEUTIC GAZETTE published in its editorial columns an article calling attention to the paper of Dr. Oatman, recommending doses equally large or larger than those of Dr. Fearn; and more recently there has come to our hand, in the shape of a clinical contribution from the pen of Dr. Reamy, of Cincinnati, additional evidence of the good results obtained by this treatment. Further than this, we believe that many of the great obstetric teachers of the day recommend this method to their classes, while they equally strongly condemn the employment of pilocarpine for the production of a sweat. Thus, Hirst directs that veratrum viride should be given in the dose of fifteen drops of the fluid extract hypodermically for the purpose of reducing the pulse-rate to 60, and if this dose fails to do good, he advises that additional doses of five drops each shall be administered with sufficient frequency to obtain this circulatory result. Dr. Lusk and Dr. Parvin mention the treatment and state the advantages which are claimed for it, but the former expresses a dread of its depressing effects, while the latter, quoting the authorities who recommend it, fails to state his own personal opinion.

Among persons who are accustomed to obtain by five- or ten-drop doses of the tincture of veratrum viride marked circulatory sedation in the early stages of acute inflammatory processes the massive doses which are recommended by obstetricians will seem unsafe, but a careful examination of the subject seems to prove that in reality the boundary line of danger is not passed when these doses are given. In the first place, there are a large number of cases on record in which poisoning has been produced by very much larger doses than any employed in obstetrics, with recovery as a result, and we all know that the number of casualties from the ingestion of this drug in any dose is very small.

The method by which veratrum viride is supposed to do good in cases of puerperal eclampsia is a double one. Chiefly from the action of its alkaloid, jervine, it powerfully depresses the circulation, and so bleeds the woman into her own vessels, relieving by this means congestion of the cerebral and spinal vessels and reducing in all probability any spasm of the renal blood-vessels which may be present, thereby causing marked increase in the flow of urine. In addition to this action, jervine also acts as a powerful sedative to the motor tracts of the spinal cord, and so directly quiets nervous excitation, while the copious sweating which often follows its administration aids in relieving the blood of impurities, the kidneys of congestion, and relaxes the peripheral blood-vessels. In the experience of Dr. Reamy, the doses which were given with successful results by means of the hypodermic needle consisted of twenty drops of Norwood's tincture of veratrum viride, a preparation which, it is to be remembered, is a saturated tincture many times stronger than that which is official in the United States Pharmacopœia. Personally, we believe that Norwood's tincture ought never to be called for, as its sale in the drug store is apt to cause confusion with the of-

ficial tincture, and because it is not of a definite strength. We believe that the official fluid extract, or normal liquid, of veratrum viride should always be chosen in the treatment of this condition. We trust that those of our readers who have had a large experience in this method of treatment will write to the GAZETTE, giving their fellow-subscribers the benefit thereof.

THE TREATMENT OF TYPHOID FEVER.

At a recent meeting of the Philadelphia Alumni Chapter of the Jefferson Medical College that body was addressed by Dr. H. G. McCormick, of Williamsport, the President of the State Board of Medical Examiners, and in his address he dealt with the subject which appears as the title of this editorial. After dwelling thoroughly upon the point that the infection of typhoid fever finds its way into the body through the alimentary canal and manifests itself chiefly by organic lesions in Peyer's patches, he emphasized the necessity, in his opinion, of keeping the surface of these ulcerated glands as clean as possible, treating the ulcers in the bowel very much as we would treat ulcers on the external surface of the body, with the object of preventing septic absorption through the ulcerated surfaces, aiding in the healing of the ulcers and in the prevention of intestinal hemorrhage. He pointed out, too, the fact that in many cases of typhoid fever not only the glands of the small but also those of the large intestine were markedly affected, and therefore that it was possible, and it was his custom, to invariably use high injections of pure water or normal saline solution, for the purpose of rendering the large bowel as clean as possible. With the object of maintaining intestinal antisepsis, he has been in the habit of administering small but frequently repeated doses of calomel, and, if necessary in order to keep the bowels actively moving, has also administered saline cathartics, believing that moderate diarrhea in the majority of instances is rather for the good of the patient than for his injury, since it prevents the locking up in the intestine of toxic material, and is rarely, if ever, in his opinion, so pressing a symptom as to require control. He believes that the calomel or its changed forms in the bowel prevent intestinal putrefaction, and that the copious flow of bile which it produces aids very materially in preventing fermentation, and so inhibits the formation of gas with all the distressing symptoms following excessive tympanites. In order to reduce the temperature of the patient, as well as to remove morbid materials from the large bowel, the water which he injects is, to use his own words, "as cold as ice can make it," and of course such a fluid, injected high up into the bowel into the very centres of the fever, reduces the temperature very effectually. While regarding with pleasure the good results which have been obtained in the hospital treatment of typhoid by the use of Brand's method of bathing, Dr. McCormick has found this method practically impossible in private practice; but, on the other hand, he thinks that the high injections of cold water which he recommends can be employed even by the untrained nurse. In addition to these facts in regard to the treatment of enteric fever, he urged upon his audience the distinct inadvisability of administering opium or acetate of lead in the event of intestinal hemorrhage arising as a complication, as he is firmly convinced that the continued free movement of the bowels during hemorrhage is capable of no harm, while the locking up of the bowel, on the other hand, simply tends to produce distention from gases, straining of the ulcerated surfaces, and interference with the circulation, which is already sufficiently impaired. He is also in the habit, for the purpose of producing intestinal antisepsis, of administering guaiacol in small doses several times daily, since, at the same time that the fever is relieved by this drug, he believes that it acts as an efficient intestinal antiseptic. In the majority of instances guaiacol itself is given, but should this drug disorder the stomach he employs the carbonate of guaiacol, and has yet to meet with instances in which the latter drug interferes with normal gastric action.

Another paper read at this meeting was that of Dr. Downes, published in this issue of the GAZETTE. The method of applying ice-bags to the abdomen in treating cases of typhoid fever is of course not new, and we should be afraid to employ the prolonged applications recommended by Dr. Downes, but "the proof of the pudding is in the eating," and if good results are obtained by this method there is no reason for not employing it.

CALCULOUS ANURIA.

Given a case of complete suppression of urine due to a kidney calculus obstructing the ureter, the necessity for surgical intervention is to-day universally conceded. Though on this one point there is a practical una-

nimity of opinion, widely divergent views are still held regarding the cause of suppression, the symptoms and signs denoting that calculus is a cause of such suppression, the method of determining the kidney affected, the time for intervention, and finally the particular form which intervention shall take.

Seguen (*Annales des Mal. des Org. Genito-Urin.*, 13 An., No. 10), in reporting four cases of calculous anuria treated by operation, with successful issue twice, regrets that failure on the part of surgeons to publish their fatal cases deprives the student of an opportunity of definitely settling many of the disputed points. He classifies anuria as reflex, toxic, and mechanical.

Reflex anuria is that observed when a healthy kidney fails to secrete as a result of nervous influence, as for instance the suppression following a severe abdominal operation, or the almost complete suppression commonly observed in renal colic. As a result of closer clinical study, the number of cases of reflex anuria is daily diminishing—and it is worthy of note that nearly every case of complete suppression, even though there exist an apparently sufficient reflex cause, will show more or less disorganized kidneys.

Toxic anuria is that of nephritis; whatever be the cause, the ultimate result is destruction of the secreting substance, hence the anuria.

Mechanical anuria is that due to obstruction of the ureters, whether it be from pressure of tumors from without, from twisting, kinking, or stricture, or from lodgment of a calculus. Seguen holds that calculous anuria is absolutely mechanical, and is observed only in those who have but one functional kidney. This is shown by the results of autopsies and by clinical experience. The suppression of function on the part of the other kidney is not a reflex resulting from calculous obstruction of the involved ureter, but is a long-standing pre-existing condition, hence the hopelessness of waiting for this imagined reflex to cease from being operative. The anuria will continue as long as the channel from the remaining healthy kidney is completely obstructed. As a result of sudden increase of pressure in the pelvis of the kidney, this organ ceases to secrete. This failure to secrete is not due to a ureteral reflex, but is solely due to tension.

It is true that when the kidney has become much disorganized, as in long-standing lithemia, there may be anuria associated with calculi which have not been obstructive. Such cases are classed as toxic rather than calculous, and are not benefited by operation. One such case resulting fatally is reported. The diagnosis may be impossible, but since these cases are much rarer than calculous anuria, when there is good reason to suspect the latter an operation should be performed.

Reflex anuria associated with blood in the bladder may also be impossible to distinguish from calculous anuria.

The anuria of surgical nephritis is preceded by a long-standing polyuria, gives rise to no renal pain, and causes rapid development of uremia. Locally there is neither hematuria nor contracture of the abdominal muscles.

The kidney in calculous anuria is congested but not materially enlarged, hence can be felt with difficulty if at all; the diagnosis is founded on sudden suppression of urine, either with pain or without, and the drawing of blood from the bladder by catheter, or the passing of it spontaneously. The determination of the side affected may be extremely difficult in the absence of distinct kidney enlargement and a clear history as to pain; this is decided by local tenderness in the kidney region, by resistance of the abdominal muscles of the affected side to deep pressure, or by ureteral tenderness elicited by rectal examination. The seat of obstruction is still more difficult to determine; a study of cases shows, however, that in two-thirds of all cases the calculus is arrested at the kidney orifice of the ureter or within a short distance of this. It is possible that severe persistent pain, of long standing, would point to partial descent of the stone, since pain practically ceases when the latter is arrested.

As to the time for operation, this should be performed immediately when a diagnosis has been established with reasonable certainty, because the condition present not only threatens life directly and immediately, but progressively brings about disorganizing changes in the kidney which when well advanced cannot be repaired even though the kidney obstruction be removed. Indeed, the operative successes have been proportionate to the promptness with which nephrotomy was performed. Seguen has collected twenty-five cases of calculous anuria in which operation was performed; ten died. Taking only the cases operated on in the first five days of suppression, the mortality was reduced about one-half.

As to the choice of operation, nephrotomy is greatly superior to pyelotomy or ureter-

otomy (the position of the stone not having been definitely determined), because it lessens the kidney congestion by bleeding, allows of thorough exploration and clearing-out of the pelvis, and facilitates retrograde catheterism of the ureter; this should always be done after removal of the most obvious obstruction, a stone in the ureter being either pushed up or cut upon and removed, with subsequent ureteral suture.

In opening the kidney in these cases it should first be thoroughly freed and delivered into the wound, so that its vessels can be seized between the thumb and finger; an incision is then made into the convex border, going through the kidney substance and freely opening the pelvis. Calculi — and there are usually many—are removed with the finger, scoop, and fountain syringe. If the ureter is permeable as far as the bladder, the kidney wound is sutured with fine catgut, the organ is sewed in place as in the case of floating kidney, and the parietal wound drained and closed. If the ureter is not surely patulous, a drainage-tube is passed into the kidney pelvis and thus a lumbar fistula is formed.

Reports on Therapeutic Progress

ON THE THERAPEUTIC EMPLOYMENT OF THE SUPRA-RENAL GLANDS.

The encouraging results obtained by the use of various glands, notably the thyroid, in therapeutics, render the recent studies of OLIVER in the *British Medical Journal* of September 14, 1895, particularly interesting. He states that during the winter of 1893–4, while prosecuting an inquiry as to the agents that vary the calibre of the arteries as determined by an instrument (the arteriometer) which the author has described elsewhere, he found that the administration, by the mouth, of a glycerin extract of the adrenals of the sheep and calf produced a marked constrictive action on the arteries, and from these observations he concluded that in all probability at least one office of the adrenals was to provide some material to the blood which contributed to the maintenance of tone in the arterial wall.

This position has since been confirmed by a research undertaken by Professor Schafer and the writer in the Physiological Laboratory of University College, London. They have found that the adrenals of man and of animals—for example, the sheep, calf, dog, guinea-pig — produce precisely the same physiological effects, and provide a material which, when injected in even very minute quantity into a vein—for example, of the rabbit, cat, dog, monkey,—induces a most energetic contraction of the arterial wall, especially of the terminal arteries, and of the heart—a contraction which raises in a very striking manner the blood-pressure in the medium and more central arteries. They have, moreover, proved that this contraction of the muscular tissue of the circulatory apparatus takes place quite independently of the nervous system, and is very much more pronounced than that which they succeeded in obtaining from drugs, such as digitalis and ergot. The contraction which invariably follows the injection in from twenty to twenty-five seconds is shown by a very decisive fall of the lever which records on the kymograph the size of an organ enclosed in a plethysmograph or oncometer, such as a limb, the spleen, or the kidney; that of the spleen, with its rich endowment of muscular tissue, being the most pronounced of all.

Inhibition of the heart, the result of stimulation of the cardiac inhibitory centre in the medulla oblongata, is a marked feature in the physiological effects; the frequency of the ventricular contractions is in consequence very markedly reduced, even to one-fourth or one-fifth, and during the acme of the supra-renal effect the auricle is for a time almost or even completely inhibited. Notwithstanding this remarkable slowing of the ventricle, the blood-pressure within the arteries is raised, and may become even more than doubled; when the vagus action is eliminated (as by section of the vagi or by subcutaneous injection of atropine), it may even be quadrupled, and then the heart's action becomes also exceedingly rapid and energetic.

This research has shown that the adrenals are undoubtedly secretory glands, and that the area in which the powerful active principle is formed is confined to the medullary portion, and consequently when this part of the gland is destroyed by disease (as in Addison's disease) the adrenals provide an extract which is totally devoid of physiological properties. It has, moreover, demonstrated that the product which the medulla furnishes to the blood has a special affinity to the muscular tissue, whether striped or plain, and is in all probability intimately associated with the production of muscular tonicity. In Addison's disease we know how much the tone of muscular fibre, whether in the heart, the

blood-vessels, or the voluntary muscles, fails; and undoubtedly an explanation of this remarkable lack of tone is afforded by the physiological observations which Professor Schafer and the author have recently made.

The experiments in the laboratory have afforded useful information in four directions bearing on the clinical side of this inquiry: *First*, they have clearly and decisively shown in what way the product which the blood derives from the adrenals affects the organism, thus illustrating the function of the gland, and suggesting the lines on which it may be rendered useful as a therapeutic agent. *Secondly*, they have demonstrated that very large doses may be administered to the dog, cat, etc., without apparent injury or loss of life; and it may be inferred from this fact that comparatively large doses may be taken by man without risk of harmful result. *Thirdly*, they indicate that the stomach may be chosen as the best avenue for administration; for the research disclosed the fact that predigestion by pepsin and hydrochloric acid does not impair in the slightest degree the activity of the extract. This fact in regard to the supra-renal glands agrees, therefore, with the general experience of the effective ingestion of the thyroid gland. And *fourthly*, the experiments show that the powdered gland dried *in vacuo* is the best preparation; for the results were equally decisive whether produced by an extract of the fresh gland or by one derived from the powder of the dried gland, even though the latter had been kept for many weeks.

In the earlier part of this inquiry the author employed a tincture and a dried aqueous extract; but he now prefers tablets of the dried gland (three to five grains), which are equal to about five times their weight of the fresh gland. He has always found it best to maintain the effect by administering a tablet at regular intervals—for example, twice or three times a day and within an hour after meals. He has given the adrenal preparation for lengthened periods without observing any injurious effect: for instance, a patient has taken the tincture (15 minims, = 15 grains of the fresh gland) three times a day for just twelve months. Moreover, in one case of diabetes he did not observe any distressing effect from eight five-grain tablets (each equivalent to twenty-five grains of the fresh gland) taken three times a day for a week. But this is the only case in which he has given comparatively large doses. He has always preferred to feel his way, guided mainly by a sense of well-being in the patient, and the readings of the arteriometer; and whenever he has observed signs of undue arterial tension and of oppression, or a marked degree of infrequency of the pulse (as in one case a reduction to 54), he has either diminished the dose or given it less frequently. In the majority of cases a three-grain tablet three times, or after a time twice a day, or a five-grain tablet twice a day, has sufficed to maintain a favorable effect.

The author's opportunities for observation in Addison's disease have been limited to two cases. In one the symptoms were not very definite, but in the other they were pronounced and the diagnosis had previously been made by Dr. Pye-Smith. In this case anemia, asthenia of the heart and of the muscular system, anorexia and the characteristic pigmentation were present in a marked degree. The bronzing was observed on the temples, sides of neck, ears, chest, abdomen, and axilla; there were no pigmentary patches, however, within the mouth. The supra-renal treatment was commenced on July 21, 1894, and in December the bronzing was found very much reduced and the patient in every respect much improved—appetite and digestion good, nausea but rarely felt, and there was nothing to prevent the taking of customary exercise. A recent report from her medical attendant, Dr. Mackern of Blackheath, shows that the improvement continues so long as the supra-renal preparation is regularly taken. Occasionally it has been omitted for a week, when the patient is certain that pigmentation on the forehead becomes more decided.

It must not, however, be supposed that every case—or indeed the majority of cases—of Addison's disease will respond to supra-renal treatment in so striking a manner as in this instance; for it will be remembered that a very large number of the cases depend on tuberculization. It is, however, not improbable that now and then cases may be met with in which the function of the adrenal glands has become lowered by some temporary cause, or impaired or crippled by a pathological state which has ceased to advance, or which is advancing but slowly, and the influence of which only becomes more particularly apparent when the general health fails, from whatever cause. Then it may be that the supra-renal material introduced by stomachal ingestion will provide physiological aid of prime importance by merely supplementing the diminished autogenic supply. We have yet to learn whether supra-renal

feeding will enable life to be maintained when the secretory function of the adrenals is abolished by disease.

Inasmuch as the distinctive cardio-vascular effect which invariably follows the injection of even very minute doses of supra-renal extract is undoubtedly the most prominent fact in the physiological action, it does not seem improbable that the adrenals may prove useful in all those clinical conditions in which vaso-motor tone is reduced; the author has therefore directed his observations somewhat specially in this direction with the view of determining whether or not this therapeutic forecast is verifiable. The conclusion which he has formed is, that a supra-renal preparation is undoubtedly valuable in affording tone to the vaso-motor system. He has elsewhere shown that in asthenia and in anemia the vaso-motor tone is as a rule reduced, and as a consequence the blood gravitates into the veins of the abdomen and of the lower part of the body when the patient assumes the upright posture—sitting and standing; in this way blood is withdrawn from the upper part of the systemic circulation in these postures, and returns to it when recumbency is assumed. Hence his arteriometer has shown that the most reliable test of the impairment or loss of vaso-motor tone is afforded by the radial artery, the diameter of which falls in the sitting and rises in the recumbent posture, whereas in a state of health the normal arterial tonus more than counterbalances the effect of gravity and permits a much larger radial calibre to be maintained in the sitting and active postures than obtains in recumbency. He has accepted this reversed radial calibration in posture, when habitual, as a general clinical guide for the prescription of the supra-renal treatment. He has observed that, as a rule, in the course of a few days' treatment the normal relation of the radial calibre to posture is restored, and that it is maintained as long as the supra-renal preparation is continued. In some cases it was pushed so as to set up a decided degree of plus arterial tension, quite recognizable by the finger. Guided by the means of observation employed, the author, therefore, concludes that supra-renal treatment is of considerable value when the tone of the vaso motor system is reduced, as at the menopause, in neurasthenia, and in anemia. Inasmuch as the administration of the gland raises the arterial tension, he has naturally avoided it in all the conditions in which plus arterial tension is present.

He has observed that supra-renal treatment produces two favorable effects in anemia: it restores the reversed postural variation of the arteries which as a rule obtains in this condition, and it frequently raises the percentage of hemoglobin. Perhaps the second effect springs in great measure from the first; for the maintenance of the larger arterial fullness in the active posture may favor the generation of blood-corpuscles in consequence of the blood being thus kept more freely distributed to the red marrow areas and prevented from drifting unduly into the abdomen, where the corpuscles may undergo too rapid destruction. However, whatever the explanation, the fact remains that in certain cases of anemia he has observed a rapid rise in the percentage of hemoglobin during the supra-renal treatment.

As the inquiry advances he hopes to determine whether supra-renal treatment increases the generation of new corpuscles, and whether it is of greater value in some forms of anemia than in others—positions which his preliminary observations support. He is disposed to think it is of some promise in the treatment of pernicious anemia—not merely because of the anemia *per se*, but because it may arrest the multiple capillary hemorrhages which are believed by some to play a prominent part in the production of the anemia. Then, besides, there is a not very improbable connection between some forms of anemia of obscure origin and impairment of supra-renal function, however produced. Dr. Douglas Stanley refers to cases of anemia in which the red blood-corpuscles and the hemoglobin are markedly reduced, the spleen and sometimes the liver enlarged, while the white corpuscles remain unaltered or are actually reduced in number, and in which there is pronounced asthenia and sometimes pigmentation of the skin. In such cases Dr. Stanley has observed that a freshly prepared extract of the supra-renals produces a marked increase in the number of the red corpuscles.

The author has treated two cases of cyclic albuminuria. In one the albumin gradually diminished, and at the end of three weeks disappeared, returning when the tablets were discontinued. In the other—a much more pronounced case—the albumin greatly diminished, and hopes are entertained that it will completely vanish on the further continuance of the treatment. In both cases the general health improved and the reversed radial measurements in posture were restored. Cy-

clic albuminuria probably depends on reduction of vaso-motor tone, the reduction being, however, so pronounced in the renal vessels that the mere assumption of the erect posture suffices to determine the transudation of albumin into the urine, which as a rule ceases when gravitation no longer operates, as in the recumbent posture.

Dr. Pavy is of opinion that "a vaso-motor paralysis implicating only the vessels of the chylopoietic viscera may stand at the foundation of the form of diabetes limited to defective assimilation of ingested carbohydrates." From the observations he has made on the pulse in diabetes, Oliver regards this position as highly probable, with, however, the qualification that in addition to the paresis of the visceral vessels there is usually a reduction of vaso-motor tone throughout the whole system. Inasmuch as the supra-renal active principle incites contraction of vessels by direct action on the muscular fibres, it is just possible it may find an appropriate application in diabetes. Last winter the author made observations on the effects of supra-renal tablets in three cases of diabetes in University College Hospital: in two the reversed radial calibration was rectified and the glucose was diminished, but in the third case the daily discharge of glucose was not appreciably affected. The preliminary observations are sufficiently encouraging, he thinks, to suggest further inquiry in this direction.

He has had one mild case of diabetes insipidus under observation in which the tablets are improving the general health and preventing the reversed radial diameters, but as yet they have produced but little effect on the average daily discharge of limpid urine (100 ounces). A case of diabetes insipidus favorably treated by ingestion of supra-renal glands is reported by Dr. Walter P. Clark in the *British Medical Journal* of May 18, 1895.

From his observations on the effects of the thyroid and supra-renal extracts on the circulation and the blood, the author is disposed to regard them as somewhat antagonistic, the former enlarging the arteries and reducing tension, while the latter produces contrary effects. If, therefore, the circulatory disturbance of exophthalmic goitre is largely the result of autogenic thyroidism, perhaps the addition of an excess of supra-renal material to the blood may serve to antagonize it. He has had but one opportunity of testing this surmise in a preliminary way—in a mild case in University College Hospital under the care of Dr. Bradford. The pulse-frequency was reduced, the reversed radial measurements were restored, and the thyroid gland and exophthalmos lessened. How far these beneficial results arose from mere rest in bed and how far from the supra-renal treatment, he cannot say.

Inasmuch as there is some resemblance between the physiological effects of the adrenal active principle and those of the digitalis group of remedies, the application of the supra-renal treatment to cases of cardiac disease in which the ordinary remedies have failed suggests itself. As yet, however, no satisfactory opportunities have presented themselves.

In the earlier part of this inquiry the remarkably pronounced constriction of the arteries and arterioles produced by the extract suggested the possible application of it as a hemostatic agent. Subsequent observation has, however, led the writer to somewhat modify that therapeutic forecast; for during the acme of the supra-renal effect on the circulation there is almost always observed an increased flow of blood from cut surfaces, or the recurrence of hemorrhage from them which had quite ceased before the injection was made. This effect was, of course, due to the enormous increase of blood pressure. But the rapid production of the cardio-vascular effect—which indeed may be appropriately termed a cardio-vascular storm—witnessed in the laboratory is one thing, while the more slowly induced clinical influence derived from the ingestion of the gland in the stomach is quite another. Still, the increment of blood-pressure which may follow the exhibition of large doses of the gland would, of course, contra-indicate the remedy in active hemorrhage, or in hemorrhage from any but the smallest arteries and capillaries. In all probability, therefore, if the adrenals are found to possess any therapeutic value in this direction, it will be in the limitation and arrest of capillary hemorrhage, such as occurs in pernicious anemia, in splenic leucocythemia, in purpura, scurvy, etc. Clinical opportunities have not yet arisen to enable the writer to test this point.

His observations have shown that the therapeutic effects of supra-renal treatment are induced but slowly and gradually—that, in fact, as a rule they are not so apparent at first by ordinary modes of observation as to enable the observer definitely to recognize them. Gradually, however, the arterial tension increases until the finger can clearly appreciate it. But he has observed that from

the first the supra-renal effect on the arteries may be definitely traced by the pulse instruments—especially the arteriometer—which initiated this inquiry and which have enabled him to study the clinical side with much greater precision and satisfaction than would have been possible without their aid.

CLIMATIC TREATMENT.

In a leading article in the London *Lancet* for Sept. 23, 1895, the profession are reminded of the dangers which may attend advice given in any routine or offhand fashion, or without adequate knowledge, to sufferers from phthisis. Climatic treatment is a large subject, which is beset with peculiar difficulties and needs special study if it is to be applied with discrimination and effect. It means much to the patient, is usually productive of decided benefit or injury, and the failures of such treatment often entail much misery on the patient and the patient's friends, and a corresponding amount of discredit upon the medical adviser. There are few catastrophes in practice more deplorable than to send a patient suffering from advanced or subacute phthisis on a long sea-voyage or to some distant health resort, only to perish miserably far from the comforts and consolations of home. Such a result may no doubt be in some cases unavoidable and may be reckoned among those "calamities of medicine" which we must all be prepared to face. But, on the other hand, there is no reason why a result of this kind should be anything but the rare exception if the medical adviser is thoroughly well posted in the principles which should regulate this department of practice. It is only fair to point out that the fault not uncommonly rests with the patient rather than with his adviser. Some patients go abroad without medical advice or in direct contravention of it, and it need hardly be said that it is most unjust to hold the profession responsible for the results which follow.

The first question which the practitioner has to consider in dealing with phthisical patients anxious to try a change of climate is, whether any change is desirable, or whether the patient should not rather remain at home. It is comparatively easy to define the cases in which the patient may be freely advised to try climatic change and those in which he must be dissuaded from what is a hopeless venture; the real difficulty is with the cases that are on the border-line. We may say with confidence that if the amount of disease is small, localized, and not progressive; if there is little or no wasting and fever; if the general health, and especially the integrity of the digestive system, is well maintained; if there are no complications; and if the patient is of a cheerful disposition and not averse to the prospect of foreign travel,—then there can be little hesitation in advising climatic change, and the only question will be to decide what change would probably be most beneficial. On the other hand, if the damage to the lung is extensive and progressive, if there is much wasting and fever, if there are marked constitutional breakdown and serious complications, then climatic change must in the great majority of such cases be forbidden, or, if permitted at all, only to a limited extent and merely as a palliative measure. These principles are, we think, clear and do not require argument or proof. The difficulty, as we have said, is chiefly with the intermediate cases. What amount of pyrexia or wasting should be held to contra-indicate climatic change in a case otherwise calling for it? In a doubtful case shall we attach more weight to the nature of the local lesion or to the constitutional symptoms? How far shall we allow the family history to govern our decision, or the existence of special symptoms, such as hemoptysis? We do not imagine that these questions can be answered very definitely, and much must always depend upon the practitioner's insight, common sense, and capacity for penetrating to the real nature of the case before him; but we may throw out a suggestion or two. The medical adviser called upon to deal with these cases will seldom regret relying to a considerable extent upon the thermometer. An evening temperature that is persistently above 100° should, as a rule, be held as a contra-indication for distant travel. Anything like severe pyrexia must be regarded as an absolute contra-indication. The practitioner should, also, attach much weight to the known history of the case, and should therefore be much on his guard with cases that he sees for the first time and of which he has no precise history. A case may present a very small local lesion, and yet the temperature or the general constitutional enfeeblement may point to the probability of a rapid progress of the disease, and hence to the futility of climatic change. Family history may also be important in this regard, but it is difficult to appraise it correctly; it is probable that its importance has been often overrated. The stage of the disease is, in

our judgment, of much less importance than the amount of lung involved and the type of the case. Thus, a case in the first stage with progressive lesion and much fever may be wholly unsuitable for climatic change, whereas a case with a single cavity, where the constitutional state is good, often does well. Much weight should be attached to the patient's capacity for taking and assimilating ample nourishment. The maintenance of nutrition is the keynote of the successful treatment of phthisis, and the prognosis may be allowed to be materially affected by the state of the digestive system. Hemoptysis or night-sweating may be proper ground for delay, but do not in themselves constitute any contra-indication for climatic change. It is not true that patients are more prone to hemorrhage at the high-altitude stations or at sea than they are at home.

Every suitable opportunity should be taken for impressing upon patients that the proper time for climatic change is when the disease is threatening rather than actually declared. It is, we conceive, the simple fact, deplorable as it is, that at present in the vast majority of cases the proper time for applying climatic treatment with effect is allowed to pass, and that treatment is commonly reserved for a stage of the disease when its success is always precarious and its failures many. On the other hand, its success in the early incipient stage of the malady is often great and brilliant. Early diagnosis is of supreme value in this matter and cannot be too earnestly insisted upon. We have not space in this article to enter upon the second part of the subject, viz.: Climatic change being deemed suitable, what shall be the nature of that change? This is a very large subject, on which it would not be possible to say anything of value with sufficient brevity. The sea voyage, the high altitudes, and the dry inland plains like those of South Africa now divide the title of supremacy. They are all most useful in their place, and we are gradually learning to distinguish the cases most suitable to each.

DISEASES OF THE ANUS.

A very practical article on this topic is contributed to the *Practitioner* for October, 1895, by GOODSALL, in which he first tells us that abscess of the anus may be due to an inflamed follicle, in which case it is often associated with other abscesses. An ischio-rectal abscess pointing in the anus is usually single, unless it is due to the burrowing of a fistula on both sides of the rectum, or to a rectal stricture with ulceration, or to a foreign body which has perforated the intestine on two sides.

The abscess cannot be opened too soon. The incision which gives the most satisfactory result is the T-shaped, with its horizontal part parallel to the anus. The three ends of the incision should extend beyond the cuticular margin of the abscess cavity. Hemorhage can always be arrested by carefully packing the incision with dry iodoform cotton-wool, and a pad and T-bandage. About four hours after the abscess has been opened, the patient should sit in water as warm as he can bear, for about half an hour; this will greatly soothe the part; if the cotton-wool packing retains its position despite the bath, it may be left *in situ*, but if it comes away it need not be renewed. Boric-acid fomentations should now be constantly applied until the abscess has healed or until it is clear that a fistula will result. Abscesses in this part of the body are generally not opened soon enough, and when they are opened the single incision made is frequently far too small. When the abscess is seen early and opened freely, it seldom causes a fistula, and often heals very quickly.

Cancer commencing in the anus is rare. When seen at or near this point it is almost always connected with a malignant growth inside the rectum.

Eczema is frequently met with, and is one of the common causes of irritation of the anus. It is caused by lack of cleanliness after defecation, by constipation and the frequent passage of flatus and rectal mucus, or by the discharge from a fistula or wound of the part. The eczema may involve only the anus and the skin immediately adjacent, excepting over the coccyx and sacrum, in which direction it frequently extends for three or four inches and causes much discomfort in walking, especially in hot weather; or it may extend in severe cases over both buttocks, the scrotum, pubes, lower part of the abdomen, and some distance down the inner sides of both thighs. These various eczematous excursions usually occur in patients whose general health is not good.

The following is a good remedy when the surface is inflamed and cracked:

℞ Pulv. zinci oxidi, gr. lx;
Liniment. camphoræ, f3 j;
Liniment. calcis, f3 vj. M.

The part having been previously cleaned with olive oil and dry cotton wool, the liniment should be gently rubbed over the surface

for about five minutes, and a layer of dry absorbent cotton wool applied. When the surface has become dry, the following powder will, in many cases, if the cause of the eczema has been removed, complete the cure:

℞ Pulv. zinci oxidi,
Pulv. gum. camphoræ, āā gr. lx;
Pulv. amyli, ʒ j.

The part should be cleaned every night and morning, and after an action of the bowels, with olive oil and cotton wool, and the powder gently rubbed over the eczematous surface.

In severe cases of eczema it is necessary to combine with the above local treatment a thorough change of air and food.

An external opening is generally well marked and easily seen. Sometimes, however, it is concealed by a fold of redundant or edematous skin, or it may be so small as to be only visible when discharge is escaping from it. When the opening cannot be seen, it may be found by passing the left index finger into the rectum and then gently pressing the anal region between the left index finger and thumb. If a complete or blind external fistula is present, the pressure on it will nearly always cause some discharge to escape at the external opening, and so indicate its position. From the external opening the sinus can be felt running towards or communicating with the rectum. The sinus feels like a cord in the subcutaneous tissue. When a fistula is frequently gathering and breaking, and therefore causing much pain and discomfort, the patient may be greatly relieved by enlarging the external opening by a T-shaped incision. This treatment necessitates only a few hours' rest on a couch or in bed, and prevents any immediate extension of the fistula; in the majority of the cases it almost, if not quite, stops the pain and greatly diminishes the discharge; it will also enable the patient to postpone, if necessary, the operation for the complete cure of his fistula.

Fistula is to be looked for when the patient complains of a burning, aching, or throbbing pain in the anus, coming on during or within half an hour after the action of the bowels, more especially when the motion is firm and hard. The pain may last from only a few minutes to several hours—the general duration is from two to four or six hours,—ceases more or less suddenly, and seldom recurs again until during or after the next action of the bowels. Patients observing this, and to avoid a recurrence of the pain, frequently allow their bowels to be unrelieved for two or more days. In many cases blood is lost only occasionally, and then only a smear; but when the patient has both a pile and a fissure, he may lose much blood at each action of the bowels.

On examination, the anus will be found contracted in appearance, and the patient, when asked to force the part down, will generally be unable to do so. Frequently there is a small fold or tab of skin at the outer margin of the fissure. In four out of five cases the fissure will be found in the middle line dorsally or just to the right or left of it, and in the majority of the remaining cases in the middle line anteriorly or just to the right or left of it.

On examining the rectum, the finger will find its entrance resisted by the spasmodic action of both sphincters; the rectum will frequently be found more or less full of feces, and a growth or growths or a polypus will be met with in the lowest inch.

When the fissure is recent and there is not a polypus or a polypoid growth, it may be cured by treatment with aperients and diet only. The bowels should be relieved at least once in the twenty-four hours, the motions being either liquid or quite soft. The anus should be carefully bathed with warm water after each action of the bowels, and a suppository—ol. theobromæ, gr. xv, frequently answers extremely well—should be passed into the rectum both before and after each action of the bowels.

When the fissure is of long standing, or when there is a growth, polypus, or internal pile, the external sphincter should be divided, and the growth, polypus or pile removed. After this has been done, a permanent cure can be safely promised. In some cases of old-standing fissure the external sphincter becomes hypertrophied and loses much of its normal elasticity, thereby reducing the orifice of the rectum. In such cases, even when the fissure has cicatrized, defecation is very difficult and painful unless the motions are relaxed or soft. When the motion is firm, the pieces passed may be not more than half an inch in diameter, or less, and frequently the patient has to go to the closet more than once before he can get any relief at all. In these cases, when the fissure has cicatrized, the pain does not last for any length of time after the action of the bowels. This condition can be relieved by forcible over-stretching of the sphincters, and it may still more certainly be cured by complete division of the external sphincter on one side

only. Patients who will not submit to stretching of the sphincters or to the division of the external sphincter will gain some relief by injecting into the rectum one ounce of olive oil every night at bedtime. The oil should, if possible, be retained all night. For the first three or four nights some of it may escape during sleep; later on there is usually complete retention of the oil during the night. Generally, as soon as the patient gets up, he has to pass the oil, and later on it is followed by a soft and well-lubricated motion.

Edematous skin is caused by prolapsed and strangulated internal piles, stricture of the rectum, ulceration of the rectum, blind internal fistula, abscess, cellulitis. When caused by internal piles, the latter should, if possible, be immediately returned into the rectum, and the following lotion constantly applied until the edema has disappeared:

℞ Liq. plumbi subacetatis, f℥ ss;
Sp. vini rect.,
Glycerini, āā f℥ j;
Aquæ rosæ, f℥ xij. M.

It is best to keep the patient in bed for a week.

When the edema is caused by stricture or ulceration of the rectum, the same lotion may be used, but it will not do so much good until the stricture has been dilated or the ulceration cured.

When the edema is caused by a blind internal fistula, it will be quickly got rid of by making a free T-shaped opening externally into the fistula.

When the edema is caused by an abscess or cellulitis, the abscess should be opened freely at once; and when cellulitis is the cause, two or more crucial incisions should be made at once completely through the edematous tissue. The incision will bleed very freely at first, but the hemorrhage can be arrested and much relief can be given to the patient by bathing the part with water as warm as the patient can bear it. No ligatures need be used to stop the bleeding. Cases in which the hemorrhage is allowed to gradually cease, assisted only by bathing the part with warm water, appear to progress much faster than when the hemorrhage is immediately arrested with ligatures, clips, and plugging.

Redundant skin occurs as a single fold or tab in cases of fissure; as one or more folds in cases of internal piles, both before and after operation; after some cases of ulceration of the rectum; and in old cases of eczema. Provided the cause has been or can be removed, the best treatment is to snip off the greater part of the folds of skin with a pair of strong and sharp scissors. No other treatment will cause them to disappear. While they are allowed to remain they always cause more or less difficulty in keeping the anus clean, and will frequently cause or keep up irritation of the part.

The most common forms of syphilitic disease of the anus are mucous tubercles, ulcers, or fissure and gumma. When the secondary forms of syphilis are present, the diagnosis may be confirmed by examining the penis or vulva for the sore or induration left by it, by finding the inguinal or femoral glands on one or both sides enlarged and more or less freely movable, by finding signs of syphilis on the tongue and fauces, and especially just at the back of the last double teeth and on the cheek adjacent to them. Occasionally there may also be a rash on the body. It is extremely rare to get secondary syphilis of the anus without also getting one or more of the above signs. Mucous tubercles cause itching of the anus during the daytime, and a burning pain at night, coming on when the patient is asleep and disturbing his rest. They are sometimes painful for a few minutes after an action of the bowels, and the part may bleed when the motions are firm. The following powder, if carefully and regularly applied, is very useful:

℞ Hydrargyri subchloridi, ʒ j;
Pulv. gum. camphoræ, ʒ j;
Pulv. amyli, ʒ iv. M.

The patient should be directed to remove all old powder and secretion before fresh powder is applied; otherwise he will probably not do so. A mixture of perchloride of mercury and iron should be administered, or, still better, an inunction of unguentum hydrargyri fortior, gr. xx, to be rubbed in every night, and the following mixture to be taken two or three times a day:

℞ Ferri sulph., gr. iij;
Magnes. sulph., gr. xxx;
Acid. sulph. dil., ♏ v;
Glycerini, fʒ j;
Infusum quassiæ, q. s. ad f℥ j. M.

When iron is given at the same time that mercury is either ingested or rubbed in, salivation or tenderness of the gums is seldom caused by the mercury, although its specific action on the syphilis is not diminished. With the above treatment the patient may, in the majority of cases, continue to follow his usual occupation all the time he is using the remedies.

In cases of syphilitic ulceration or fissure of the anus the unguentum hydrargyri subchloridi should be used instead of the powder recommended for mucous tubercles.

Gumma is occasionally met with near the anus or just outside the ischio-rectal fossa. Care must be taken not to treat the gumma as an abscess. With large doses of iodide of potassium it is slowly absorbed. The cases usually occur in elderly patients with more or less broken-down constitutions, requiring good food, rest, and change of air, as well as medicinal treatment.

The writer has so far never seen a primary syphilitic sore of the anus.

Chancroidal ulcers or soft sores are generally multiple and secondary to sores in the vulva. They may be cured by the application of a ten-per-cent. solution of cocaine, followed by the thorough application of sulphate of copper, especially round the margin of the ulcer. After the slough has separated, the ordinary red lotion or a sulphate-of-copper lotion—two to four grains to the ounce—should be applied. This treatment is sufficient in many cases, unless the patient also has syphilis.

Venous piles or thrombi, when large, are tense and dark-blue in color; when small, the color is only seen by making the skin tense over the clot. They may be multiple or single, and vary in size from a damson to a pin's head. They are found close to the anal orifice, and often extend to just inside it. They are usually caused by straining in the act of passing a hard fecal mass or lifting a heavy weight. They come suddenly. The patient complains of pain when the bowels are relieved, also of itching, soreness or tenderness when walking and sitting. The bowels should be relieved once or twice a day by aperients, and the lead-and-spirit lotion recommended for edematous skin should be kept constantly applied. This treatment usually relieves all discomfort in from twenty-four to forty-eight hours, and the blood-clot will be absorbed in about three weeks from its commencement.

When the clot is large and on the point of making its way through the skin, it is better treatment to lay open the pile and turn out the clot. When this is done, the overhanging skin should be removed; if left, it will become swollen, and may be painful for several days. The quickest treatment is to remove an elliptical piece of skin, about one-fourth to three-fourths of an inch in extent, from the most prominent part of the pile, with a pair of scissors, and to then dissect out the blood-clot. This can be done without rupturing the capsule in which the clot is contained. Pressure should be applied until all bleeding has ceased; the sides of the incision should then be carefully adjusted to each other, and a pad of absorbent cotton wool applied. The bowels should not be relieved for forty-eight hours; by this time the part will, in most cases, be found soundly healed.

Verrucæ should be removed with a pair of scissors. The left index finger having been passed into the rectum, the anal region can be made tense between the finger and the thumb so that only the wart, and none of the skin, shall be removed. After the warts have been removed, the zinc, camphor, and starch powder should be applied for a few days.

THE KIND OF CERVIX THAT REQUIRES TRACHELORRHAPHY.

In an article with this title, GILES tells us, in *Clinical Sketches* for November, 1895, that while he readily grants that in certain appropriate cases repair of a torn cervix may be followed by disappearance of general nervous symptoms, he has so little confidence in the value of this or any other operation for the cure of nervous disorders, as such, that he leaves this aspect of the question altogether, and confines his remarks to the indications for trachelorrhaphy afforded by definite local conditions.

When a cervix is torn (as during labor), the raw edges become healed over by granulation and cicatrization, but, as a rule, without uniting. The resulting fissure, even if deep or bilateral, does not necessarily give rise to symptoms: for the cervical mucous membrane may gradually acquire the characters of the vaginal epithelium; the external os retreats, as it were, towards the internal, while the anterior and posterior lips of the cervix become in reality lips or lappets, which can be readily separated to a greater or less extent. A cervix in this condition is not uncommonly discovered when a vaginal examination is made on account of other symptoms; and we may admit, as a general statement, that a laceration that has healed over does not, as such, require repair.

If general neurotic symptoms coexist with such a condition, an attempt to cure them by local treatment will be almost certainly a failure.

But the lesion may take a less favorable course. The exposed cervical mucous mem-

brane may become unhealthy, either alone or as part of a general endometritis; it then becomes congested, and the lips separate—the tendency to separation is exaggerated by a marked coincident flexion of the uterus; the everted mucous membrane is then bathed in the unhealthy secretions (arising partly from the uterus) found in the vagina; and it is but a short step from this condition to that of erosion, with the formation of the retention-cysts known as Nabothian follicles. The congestion and edema of the cervix commonly spread to the body of the uterus, which becomes heavy, elongated, and enlarged, resembling the condition found in subinvolution. With the chronic endometritis and metritis so produced is frequently associated prolapse of the ovaries into Douglas's pouch, especially when there is also retroflexion. The ovaries share in the congestion and become unduly sensitive. The usual symptoms complained of under these circumstances are: abundant leucorrhea, sacral aching, a feeling of weight and "bearing down" in the pelvis, and dyspareunia.

We have here in outline the picture of a case requiring the operation of trachelorrhaphy. Yet this must not be done at once; a little preparation is necessary. First, the patient should be kept in bed for ten days if circumstances allow; meanwhile the congestion is relieved by the usual applications of tampons and douches. The uterus should be restored to its place when this is possible; and one or more applications may be made to the endometrium, according to the extent of the endometritis. In some cases these measures will suffice for relief, or even temporary cure; but in any case this stage should be arrived at before repair is attempted, otherwise there is risk of non-union, and so of failure of the operation.

As to the method of repairing the cervix, there are various unnamed modifications of Emmet's original plan. The following is one of the simplest; it is practiced by Dr. W. H. Fenton, and is performed with the aid of a double reversible hook devised by him. This instrument may be described as consisting of two tenacula hinged together, one of which is, as it were, bisected longitudinally so as to form two hooks side by side. The single blade works between these parallel limbs. When the handles are slightly approximated the hooks look towards each other like a volsella; by further approximation the hooks first meet, the single one between the other two, and then diverge so as to look away from each other. Thus the one instrument serves either to separate the two lips of the cervix or to hold them together.

The Operation.—After the usual preparations, the patient is placed in the lithotomy position, an Auvard speculum is placed in the vagina, and the vagina is douched. Curetting may next be done, but if the preliminary treatment above described has been properly carried out this should be unnecessary. The double hook is then introduced between the lips of the cervix, and its two limbs separated. It should be placed so that the hooks are inserted into the median line of the lips. When these are everted so their inner surfaces lie almost in one plane, a flap is dissected off each side as follows: The scalpel is carried from front to back, parallel to and a little to one side of the median line; the two ends of this incision are connected by a curved incision carried round the margin of the lips. Similar incisions are made on the other side. Then, commencing at one corner, each flap is dissected off. The tissue that is left between them is to form the mucous membrane of the new cervical canal. During the dissection of the flaps a certain amount of blood escapes, which has the effect of diminishing the volume of the cervical lips; and these, even though they looked at first far too bulky to meet, now fall readily together on the removal of the instrument. When the lips have been brought into apposition, the double hook is reapplied by being placed with one limb in front of the cervix and the other behind, still in the median line. Thus the lips are conveniently held in position while sutures are passed through, three or four on each side. For this purpose a slightly curved needle on a handle is convenient; but, if preferred, Hagedorn's needles may be used. The material may be silver wire, silk, or silkworm-gut. Tightening and securing of the wire is done by means of Aveling's shot and coils. This is especially useful when the cervix cannot be brought low down, and when, in consequence, tying is difficult. But my preference is for thick silk, which is less liable to cut through, and from which there is no risk of irritating the vaginal walls. As the last step of the operation a sound is passed, to make sure that the cervical canal is not blocked up. The operator need not be afraid of making the external os too small, for it is always found later to be larger than it was left at the time of operation. The vagina is packed with iodoform gauze.

As regards the after-treatment, it is best to keep the vagina as dry as possible; but if there should be discharge, irrigation is required, and after each irrigation the vagina should be dried. The sutures are removed at about the tenth day; for this purpose the patient should be placed in a good light, preferably in the lithotomy position.

The author has seen and practiced this operation at the Chelsea Hospital for Women in about a dozen cases, and the results are very good.

When seen several months later the cervix presents the rounded conical appearance which is the normal form; and there is little chance of recurrence, especially if the two sutures nearest the median line have been properly secured.

Further, when the operation is undertaken for the reasons here given, the relief of all the symptoms is most satisfactory—a result which does not uniformly follow when it is performed for the relief of nervous disturbances.

MERCURY IN HEART DISEASE.

In the London *Lancet* for September 28, 1895, MURRAY states that he has been somewhat disappointed in the discussion at Edinburgh on cardiac stimulants, inasmuch as hardly any reference was made to the value of mercury in cases of heart disease. Views on this subject have not advanced of late, and the mind of the profession has not grasped the idea that mercury has a value in heart disease far beyond what may be termed its "alterative" action. The administration of this drug in cardiac dropsy and in all cases of passive congestion of the pulmonary and portal systems is as old as the hills, and the old-fashioned physicians know well enough that thirty or forty years ago no one thought of treating these conditions except by a mercurial pill followed by a saline or jalap purgative and a diuretic mixture containing digitalis. Then came the days when the diuretic mixture was changed for one of muriate of ammonio-citrate of iron with digitalis, and some of us remember the remarkable papers of Dr. Handfield Jones on the value of this combination. Now we have come to the days of arsenic, strychnine, iodide of potassium, and a host of cardiac stimulants, together with rest and cardiac gymnastics. In all cases our remedies do but assist nature in bringing about healthy compensatory changes by preventing degeneration of the muscles and vessels of the heart and the main blood-vessels. Repeated observation has convinced the author that mercury possesses a value far beyond the supposed alterative nature of its action—not that it fails to relieve congested vessels by drainage or osmosis, for it would fail to relieve the heart did it not eliminate biliary and other effete matter from the blood and tissues of the liver and portal system, for instance; but when due allowance has been made for these primary effects, there remains strong evidence that it tells upon the heart itself. Its special benefits are exercised in cases of dilated and hypertrophied heart. By means of it the "thready," weak, rapid and irregular pulse is made full, soft, regular, and slow, with manifest relief of such symptoms as dyspnea, pectoral weight and tightness, and sensations of faintness. The "angina sine dolore" is often marvellously relieved or removed by two or three grains of blue pill three times a day, and the severe forms of "angina pectoris" not seldom disappear under its influence. While the nitrites, nitroglycerin, etc., afford temporary relief, this remedy is much more permanent in its effects. To give digitalis a fair chance, it is absolutely necessary to pave its way by preliminary doses of mercury, and to foster its action by repeated doses. Many of the failures, or apparent failures, under digitalis, etc., are due to the fact that no blue pill or calomel was given, and it often falls to the lot of the consultant to make a great hit by inserting the mercurial into the previous treatment. Much more true is this of iron and digitalis combined. We see a patient with engorged vessels and laboring heart taking iron and digitalis, much to the detriment and not to the benefit of the case; each dose is but adding fuel to the fire—energizing the heart in its futile attempts to drive the blood through the engorged vascular system, and thus exhausting the organ in its hopeless struggle. We change all this by frequently repeated doses of mercury; we drain the portal system, we exosmose the water from the general vascular system, we suck up dropsical accumulations, and by pushing the drug we get hold of the heart itself and produce the slow, soft, regular, and effectual pulse, giving the digitalis or strophanthus a fair chance to come in as a cardiac tonic; and at last we complete the circle by arriving at the point whence we started with the patient in a very different condition, and we can give the iron and digitalis now with impunity—nay, with immense benefit. Let the following case speak for itself, and its citation is the more

apt as the patient came from being under the care of an eminent Edinburgh physician in the very condition I have described, viz., a dilated and hypertrophied heart goaded to excess in a useless effort by iron and digitalis.

The patient, a hard-working Scotchman, had all the talent, physique and energy peculiar to his race. He gradually developed symptoms of valvular disease and dilated heart when about forty-eight years of age. He went to Edinburgh and was under treatment there for several weeks. At last he was sent home with the assurance that nothing more could be done for him. Dr. Wilson, of Wallsend, was summoned to see him, and called the writer in consultation on the case. They found the patient in the following condition: Propped up in bed; countenance anxious, eyes seeming to protrude from their sockets; face bathed in perspiration; lips and skin livid; breathing shallow, frequent, and difficult, accompanied by a constant hacking and ineffectual cough; pulse hardly perceptible, irregular, thready; heart's action tumultuous and irregular, the cardiac sounds almost inaudible, and a distant murmur could be heard with both sounds at both the right and the left apex; no cardiac impulses could be felt except a wavy movement at the epigastrium; the liver was enlarged, and the abdominal cavity was distended with fluid, as were also the lower extremities and the scrotum; the pleural cavities also were occupied to a considerable extent by fluid effusion.

The physicians determined to abandon the usual cardiac stimulants, and gave two or three grains of blue pill thrice a day, and at the end of two days a smart purge of jalap. Greatly encouraged by the result, they pushed the blue pill (two to three grains three times a day) for a week or more, and during that time a steady relief of all the symptoms ensued: the countenance became placid, the tongue (before dry and brown) moist, and the pulse more regular, full, and soft; the dropsical accumulations gradually receded, and the breathing resumed a normal character. Now was the time for digitalis—always best given on a falling tide in dropsy,—and doubtless the patient owed much of his rapid recovery to the temporary and occasional use of that drug; but the staple of the treatment was the steady use of blue pill, now gradually diminished to two pills a day, and finally to a five-grain pill at bedtime. The man felt himself to be quite free from all his troubles in six weeks; from this time he resumed his duties and became a useful and active member of society.

Now the point of interest in this case is, that during the next ten years the patient stuck to his blue pill every night, with few intermissions, and declared that whenever he did leave it off for a few nights his heart began to trouble him and his breathing became difficult. As will be seen from the post-mortem notes, this nightly dose was in some mysterious way enabling a heart massive with disease to discharge its duties in such a way as to make its owner feel quite well. During the ten or eleven years of his subsequent life, Dr. Wilson calculates, he took 20,000 grains of blue pill; it never salivated him, it neither purged nor nauseated him, and never gave his breath a touch of fetor. At last, however, his old symptoms returned, the machinery was worn out, and he died chiefly from the pressure of abdominal fluid on his enormous heart.

The post-mortem examination revealed an enormously enlarged heart—the space occupied by it measured eight inches across and eight inches from above downwards; the lungs were displaced backwards and compressed by it. The right auricle was very much dilated, its muscular tissue hypertrophied; the auriculo-ventricular orifice was very much increased in size, readily admitting eight fingers at once; the tricuspid valves much thickened and opaque; right ventricle much dilated and its walls thin. The left auricle was much dilated, walls thick, endocardium opaque; in one part of the wall of the auricle there were two bars of calcified muscular tissue united by a crossbar of the same substance; the auriculo-ventricular opening was much constricted and hardly admitted the tip of the index finger; the mitral valves were adherent, so that there was only a small opening like a button-hole between them. The valves were thick and rigid, but not calcified. The left ventricle was dilated, but its capacity was only about one-half that of the right; walls not much increased in thickness. The peritoneal cavity contained a considerable amount of clear fluid. The spleen showed a dense white patch of scar tissue one-fourth of an inch deep in the centre—evidently the site of a very old infarction. The surface of the liver was nodular; on section it showed dense strands of connective tissue of advanced cirrhosis.

The author remarks that to rescue a man from the jaws of death and give him ten or

eleven years of fairly good health confers on any drug a reputation. Its potency is established. We therefore ask: How does it act? Is it a cardiac tonic, stimulant, alterative, or what? Or does it act on the secondary apparatus of the circulation and the blood itself by reducing the resistance of the vessels, diminishing the volume of blood, and altering its fibrinity so as to make it circulate more freely? I think it does all these things, and at the same time it soothes the heart by purifying the blood of effete accumulations.

HEMORRHAGE AFTER REMOVAL OF THE TONSILS.

In an interesting editorial in the *New York Medical Journal* for November 16, 1895, the causes and dangers of this accident are discussed.

The amygdalotome, or tonsil guillotine, in one or another of its multifarious forms, is to be found in almost every general practitioner's armamentarium, and it is to be feared that few who possess it feel any hesitation about resorting to its use, no matter what may be the features of the enlarged tonsil or the peculiarities of the patient. There seems to be a general impression that ablation of the tonsil by means of the guillotine is free from danger. It is in consequence of this impression, perhaps, that, as Dr. William H. Daly, of Pittsburg, said in a recent discussion of the subject before the American Laryngological Association, there has been "more bad surgery done upon the tonsils than upon any other part of the human body."

This discussion followed the reading of a paper by Dr. John W. Farlow, of Boston, entitled, "Some Remarks on Removal of the Tonsils." Dr. Farlow made a particular point of the danger of hemorrhage after the use of the guillotine, especially in adults and in cases in which the tonsil was large and tough. Dr. Farlow's statement that "very many cases of troublesome bleeding occur which are never reported" should not pass unheeded, or his other statement that "in delicate children every drop of blood may be valuable." Dr. Farlow was supported by every speaker who took part in the discussion. Dr. Bosworth, of New York, after citing Guersant's statement that in 5000 amygdalotomies he had never seen severe hemorrhage, added the significant comment that Guersant's cases had all been in children. Dr. Ingals, of Chicago, said that he was well aware of the danger from bleeding when the amygdalotome was used, for he had seen a number of trying instances of the kind. Dr. Daly placed himself on record as saying that "the man who pinned his faith to the statement that there was no danger of hemorrhage in amygdalotomy would sooner or later meet his Waterloo," and added that he deserved to meet such a fate for relying upon worthless statistics. He himself had met with several cases of alarming hemorrhage, and gave a striking sketch of a case in which he had made an appointment to remove the tonsils from a farmer's son, but had learned on his arrival at the house that the boy was out on the farm, whereupon he went out and met the boy in the woods and did the operation then and there, with the result that he "had to spend several hours with his fingers in the patient's throat to arrest the hemorrhage." Dr. Casselberry had had enough cases of serious hemorrhage to make him "cautious and somewhat anxious" about every patient operated upon with the amygdalotome, and he was not sure that such hemorrhages might not occur in children; indeed, he knew of a fatal case in a child, three years old, whom there had been no reason to regard as a "bleeder." Dr. Shurly had had two very serious cases of tonsillar hemorrhage in children. Dr. Murray mentioned an instance in which the patient had nearly bled to death.

If this is what skilled laryngologists have to say of the tonsil guillotine, the general practitioner may well be cautious in its use. If the tonsil must still be subjected to surgical procedures as often as it has been in the past, at least let those procedures be made as free from danger as possible, either by substituting a crushing for a cutting instrument, as advocated by Dr. Farlow, or by taking away "only enough of the projecting portion to relieve the mechanical obstruction and the pressure and irritation produced," which Dr. Shurly has found sufficient.

ABSORPTION FROM THE BLADDER, URETHRA, AND VAGINA.

In an original research on this subject, WALSH discovered the facts given below and which he has published in the *University Medical Magazine* for September, 1895. He thinks that his experiments warrant the conclusion that the bladder does absorb; and he endeavored to determine, if possible, why other experimenters had failed in a good many instances to find absorption. (See

THERAPEUTIC GAZETTE for January, 1896, page 28.)

Küss and Susini's experiments with the solution of ferrocyanide inside the bladder, and the iron salt on the outside, though quoted approvingly by physiologists, are absolutely of no value as regards absorption. To be absorbed, a substance need not find its way through all the coats to the peritoneal surface. Once through the vesical epithelium, it finds in the muscle the open lymphatic spaces ready to carry it into the system through the lymph-channels.

Absorption is eminently a vital quality; to kill the animal is to stop at once all the vital processes, especially the lymph movement which brings about absorption. Osmosis may still go on through dead animal membranes; but this is very different from the vital force that causes absorption, though it has been often confounded with it.

The somewhat similar experiments of Cazeneuve and Livom with recently removed bladders, and the test for urea in the water in which they were placed, may be criticised in the same way. They were studying the difference in imbibition between the recently dead bladder-walls kept in a state somewhat resembling the natural one by immersion in warm water, and the bladder-walls rendered porous by rigor mortis,—but not absorption from the bladder.

Bert and Jolyet and Alling found that on tying the urethra at the neck of the bladder they got no absorption from the bladder; and with very good reason. They had seriously disturbed or effectually tied off the lymphatics leading from the bladder—the paths by which any substance would find its way into the system from the bladder. Sappey, in his "Description et Iconographie des Vaisseaux Lymphatiques," says: "In the dog and rabbit, the lymphatic trunks run from the urethra, they curve back to the right and left and go on to terminate in the glands situated below the external iliac vessels." A ligature at the neck of the bladder would almost surely include them, and so cut off all possibility of absorption.

As to the absorption taking place from the urethra, not the bladder: First, experiments seem to show that the posterior urethra absorbs scarcely better than the bladder itself. Second, where a proper-sized catheter is used, there is not likely to be any dribbling into the urethra during the experiment; and any that comes out after the catheter is withdrawn is immediately ejected. Third, where the drug is well diluted, as it was in all their experiments, and followed always by at least five cubic centimeters of water, to clear the drug from the catheter, not enough of the solution could possibly stay in the canal to produce the characteristic effect of the drugs, as noted in the experiments. Finally, as to injury inflicted on the bladder-walls by catheterization: where this is done carefully and gently, it scarcely seems possible. The animals bear it without any manifestation of pain, they do not need to be tied, and one person can do the catheterization unassisted. For smaller animals it could be urged with more probability, but for good-sized dogs it seems unreasonable to say that they are injured by every insertion of a catheter.

Susini's experiments with potassium iodide directly on the bladder of dogs have been shown to be conclusive by Ashdown, who demonstrated that, injected into the bladder, it was eliminated by the kidneys. As to the experiments with potassium iodide and belladonna on his own bladder, not enough of the drugs was employed to allow for the accumulation in the system which is necessary to give the symptoms of their intoxication.

The last series of experiments by direct injection of poisonous substances into the bladder, performed by Drs. J. Boyer and L. Guinard, seem to have been done with a great deal of care. The negative results obtained by them can only be attributed to the fact that they used doses not sufficiently large. To a dog of sixteen kilos they gave fifty centigrammes of cocaine. Now, a dose of .03 gramme per kilo (which would be, for a dog of this size, forty-eight centigrammes) has been known not to kill a dog when injected directly into a vein. It is not very surprising, then, if the much slower absorption of the same dose from the bladder should fail to give noticeable symptoms. Morphine has to be used in very large doses to affect dogs, and Boyer and Guinard used it in the very ordinary doses of ten centigrammes. Of pilocarpine, they used ten centigrammes for a dog of sixteen kilos, and twenty centigrammes for one of eighteen kilos. The toxic dose by the vein is given as four centigrammes per kilo (that would be, for dogs of the sizes given, sixty-four and seventy-two centigrammes respectively). The dose they used was very small, and any noticeable symptoms could scarcely be expected.

For atropine, dogs have an idiosyncrasy, and stand the drug very well; ten centigrammes for a dog of nineteen kilos is

very small dose. The toxic dose by the vein should be about eight times that amount. Veratrine was also used in too small doses; more than twice the amount per kilo than they used has been known not to kill a dog when injected into a vein.

There remain the experiments with strychnine. Five centigrammes of strychnine, even in the bladder, ought to give serious symptoms, and ten centigrammes ought to be absolutely fatal. The author's own experiments with much smaller doses gave distinct symptoms. Most of Ashdown's experiments were done with strychnine, and he never failed to get results with much smaller doses. Bazy, in contradiction to whose experiments Boyer and Guinard undertook theirs, did several experiments with strychnine in public after the publication of their article, so that there remains no reasonable doubt that it is absorbed from the bladder.

Absorption is a matter of lymphatics, not of epithelial cells. The various forms of cells lining different parts of the respiratory, digestive, and genito-urinary tracts play mainly a protective part for the lymphatic structures beneath. That in some places they have a heightened activity, and seemingly a selective action in absorption, is true; but at no part do they absolutely prevent absorption. Even the cutaneous epithelium, with its horny epiderm, will allow the passage of a number of substances. Rapidity of absorption, then, depends on the richness of the lymphatic structures in a part, and not on the character of the mucous membrane covering it. The lymphatics in the bladder are not numerous, but they are easily demonstrable. Absorption should take place, then, though not rapidly.

Absorption from the vagina is more rapid than from the bladder, and this is in accordance with the richness of its lymphatic supply. If we were to consider absorption as dependent on the character of the epithelium, the many-layered, stratified, transitional epithelium of the vagina, almost cutaneous in character, would seem to be capable of effectually preventing all absorption. The difference in character between the epithelium of the first inch and that of the rest of the anterior urethra has no effect on its absorptive power.

The bladder absorbs somewhat slowly the drugs that are injected into it, but it has a true absorptive power.

The urinary constituents, water and solids, are, to a certain extent, reabsorbed from the bladder when allowed to remain in it for some time.

The anterior urethra absorbs more readily and rapidly than the bladder; the posterior urethra, about as the bladder does.

The vagina absorbs very readily ordinary drugs injected into it.

TREATMENT OF ACUTE SEPSIS OCCURRING AFTER LABOR AND ABORTIONS, TO PREVENT ITS EXTENSION, OR FROM CAUSING PERMANENT INJURY.

GILL WYLIE, in the *New York Medical Record* of September 21, 1895, discusses this important topic. He is of the opinion that what may be called the fashionable methods now being resorted to, and so ably advocated by some, are very radically defective when applied to any but fresh and rather superficial septic uterine infection. He refers to curettage and gauze packing, as it is called. Of course, in all cases where possible, the uterus should be emptied, but there is an erroneous belief and teaching now very prevalent, that sepsis is caused by retained placenta, and that all that is needed is to curette this out and pack the uterus with iodoform gauze. It is true that retained placental tissue and clots make a very favorable nidus and food for septic germs, but uninfected placental tissue will not cause sepsis. Of course it should be removed, and it is very important to remove or give free drainage to all effete tissue when once the septic germs become active; but sepsis will, as we well know, start up and kill when there is no such thing as a placenta about.

Now as to drainage: Loosely packed gauze drains well in ordinary cavities where the secretions or excretions are thin and watery; but the uterus has in it many glands and follicles which secrete or excrete, especially when irritated or inflamed, a thick gummy material, which after a few hours soon chokes drainage through gauze, and what escapes passes around and in spite of, and not through, the gauze. Besides, the uterus is a contractile organ with a very powerful sphincter guarding its mouth, and as soon as contractions begin this constricts the gauze and obstructs drainage. In all cases the uterus should be carefully emptied, but the combined method of the hand or fingers and forceps is preferable where practicable. After removing with forceps all large pieces, Wylie very carefully runs a large-sized curette over

the surface to bring away small adherent pieces; but soon after labor and abortions, especially when the tissues have been rendered soft and patulous from sepsis, it is an easy matter to push a small curette entirely through the uterus, as has not infrequently been done. Again, if after the first chill and rise of temperature from puerperal sepsis, in most cases, if one empties well the uterus of all clots and retained placenta, and all material favorable to the rapid development of sepsis, one good antiseptic washing out and loose packing with gauze will check the sepsis, and in many cases effect a cure; but where there is failure to effect a complete emptying of all, or almost all, of the effete material, or at least that part of it already infected by sepsis, curetting and the foregoing method of gauze-packing will not effect a cure even when supplemented by one washing out; and when it fails, the gauze left in over twelve or twenty-four hours increases the danger to life by tending to keep the septic material in the uterus, and a close packing with gauze tends to force the sepsis into the sinuses, veins, or Fallopian tubes. In cases of sepsis which have existed for several days, the curettage and gauze-packing is much more likely to fail, for the sepsis has had time to penetrate deeper into the uterine tissues. Of course, when the septic material has entered the peritoneum or is located in the veins or lymphatics outside of the uterus, no local treatment of the uterus can effect a complete cure.

We will assume that the septic material, the centre and source of the infected matter, is still within the uterus and has not yet infected the peritoneum nor the lymphatics and veins outside—for experience teaches us that this localization generally continues for many hours, and often for two, three, and four days, or more. In all cases unless we can clearly detect local sepsis within the peritoneum, the lymphatics, veins, or some tissue outside of the uterus, we must at once act on the assumption that it is confined to the uterus, testing the matter by actual emptying and local treatment of the uterine cavity. The method the writer proposes, practiced fifteen years ago, has proved to be more reliable than the method now known as curettage and gauze-packing.

Called to see a case of puerperal fever, it will not do to examine and, finding a laceration of the perineum or cervix, to assume that a small open wound, except in rare forms of septic poison, such as true diphtheria, can cause the symptoms of a severe or dangerous puerperal sepsis. After washing out the vagina and cleaning off and cauterizing with pure carbolic acid any torn or lacerated tissue, a few times, unless there is rapid and continued improvement the author soon resorts to washing out the uterus (which will as a rule be found patulous and readily dilatable in septic cases) with a solution of 1:40 of Calvert's No. 1 carbolic-acid solution. Beginning cautiously and carefully, he gives the whole cavity a soaking wash of two quarts or more; then with his hand, fingers, and forceps where practicable, he empties the uterus of all clots and effete material. If it is an old case, he first dilates the os well with steel dilators, but never with tents of any kind, and after running a large-sized curette over the surface to get off all small adherent tissues he swabs out well the whole cavity with pure carbolic acid rendered soluble with a little glycerin and water, and immediately follows this up by washing out the uterus with a hot solution of carbolic acid, 1:60, injecting a quart or more. If the uterus is large and very patulous he uses a large-sized Chamberlain's glass tube, but in all other cases and after the first washing or two he invariably uses a large-sized No. 12 or 14 old-style stiff-gum catheter. He introduces the catheter, with a stylet in it, well up to the fundus; then he fills the catheter with water after removing the stylet, and connects it with the ordinary Davidson's syringe. Beginning his injection very slowly, and gradually turning the catheter about in the uterus, he pumps the water with full force as soon as it begins to run out of the vagina freely. He aims to completely flood the whole cavity and use not less than from one to two quarts of 1:60 solution of Calvert's No. 1 carbolic acid. Immediately after the first washing out in acute or severe cases the patient will have, as a rule, a chill and rapid rise of temperature, which is undoubtedly due to increased absorption from the fresh wounds to the mucous membranes by the instruments used.

The reason he uses the catheter is that it can be readily adapted to any size or position of the uterus, which often hardens up and flexes sharply as soon as the sepsis is checked, though poison may not yet be completely eliminated and is liable to develop again and renew itself in full force. Glass tubes often fail to reach the fundus after a few washings. Double recurrent and other theoretical contrivances often fail to do more than wash out a small section of the cavity by running in at

one eye and out at the other, and those fine contrivances which aim to forcibly distend the uterus or vagina before emptying the fluid are very liable to force the septic material through the Fallopian tubes into the peritoneum. It takes an expert to reach the fundus and wash out efficiently as the uterus begins to contract; and failure to wash out or kill all germs means a relapse.

To empty the uterus and wash it out is very important, but unless the first washing is followed up by another washing in about one hour after the first is finished, and especially if an interval of three or more hours is allowed to intervene, the treatment will utterly fail in many cases—in fact, in almost all except very fresh and simple cases—of septic infection. In from three to eight hours the germs left have found effete material to develop on, excretions and mucus cover the surface, and almost all of the original local sepsis has been reproduced. Thus it is essential to wash every hour, until the escaping fluid is practically clear of all—especially all dark-colored—material, and the temperature has fallen to or near normal. As the water returns clearer and clearer the temperature sinks gradually, and, as a rule, after five or six washings the temperature is near the normal mark and will remain so. If the temperature does not materially fall after five or six washings, then the fever is kept up by other sources of septic infection, and we must find them and when practical must operate to get rid of the sepsis.

The author has tried different antiseptic solutions in washing out the uterus, and prefers 1:60 to 1:100 solution of Calvert's No. 1 carbolic acid. It is safe, does not constringe the parts, and soaks into the tissues and softens them. It is possible that the carbolic acid enters the circulation and acts favorably, but it is its local action that he relies upon. If more than six hours' washings are required to control the sepsis, he uses alternately a solution of boric acid. If the urine be watched, there is no danger of carbolic-acid poisoning, for the urine becomes smoky and plainly indicates that the carbolic-acid injections should be stopped or at least lessened. In old indolent sloughing cases he uses peroxide of hydrogen or iodoform, and usually inserts a large hard-rubber intra-uterine drainage-tube. Bichloride of mercury cannot be used safely except in weak solution, 1:5000, and not too often; besides, it constringes the tissues and interferes with free drainage and insertion of the tube.

STUDIES IN ANESTHESIA AND ANESTHETICS.

KEEFE writes under this title in the *Boston Medical and Surgical Journal* of November 28, 1895. He thinks if there is any suspicion of weak heart, the patient should be put under the influence of digitalis for twenty-four hours, and given a hypodermic of four grammes of the tincture before beginning the inhalation.

Every one administering an anesthetic should measure the dose Fifteen grammes (or half an ounce) of chloroform is a proper dose to produce anesthesia in an adult, and should be poured on at once, and no more should be used except as needed to continue the anesthesia.

Forty-five grammes (or 1½ ounces) of ether is enough for a woman, and sixty grammes (or two ounces) is enough for a man, and should be the charging dose. There may be an exceptional case where even sixty grammes will not subdue a patient, but such an one should be considered not a good subject for ether, and chloroform should be substituted or added.

The face, pulse, and respiration, in order named, should be watched attentively during chloroform-administration, and the respiration and pulse in ether.

It is not enough to see that the chest moves; we must hear the air enter the lungs.

A good plan is to combine chloroform with ether, especially if one fears to assume the responsibility of using chloroform; and twelve grammes (or three drachms) of chloroform and thirty grammes (or one ounce) of ether is a good charge and can be depended upon to produce anesthesia. In this way the stage of excitement so common in ether anesthesia is avoided.

Withdrawal of the anesthetic, the frequent momentary inversion of the patient, artificial respiration, strychnine, heat, digitalis, the galvanic battery, and sponging or sprinkling of face and breast with ice-water, are the means for restoration of function arrested by anesthetics.

THE FORMATION OF BLOOD FROM INORGANIC IRON.

Of the few physiological chemists in this country, none stand higher at home and abroad than CHITTENDON, who, in the *Dietetic and Hygienic Gazette* for November, 1895, states editorially that hardly any one question in physiological chemistry has provoked more discussion than that suggested by the

above title. Will the iron contained in ordinary inorganic preparations be absorbed from the intestine, and can it be utilized in the formation of hemoglobin? The question has been asked many times in the past, and the answer is at least implied in the fact that in older handbooks of therapeutics the inorganic preparations of iron constitute the sole remedies in chlorosis. Of late, however, there has been a growing conviction that, in the formation of hemoglobin within the body, only organic iron compounds can be utilized —such, for example, as are found in the ordinary foodstuffs.

That inorganic iron compounds can be absorbed from the intestine, at least to a certain extent, is seemingly proved by the experiments of Professor Kunkel, of Würzburg, and his results have been recently confirmed by Woltering, of Utrecht, who also claims that the absorbed iron is built up into peculiar organic compounds in the liver. Kunkel, who has taken up the subject anew, considers that there are two questions which need to be definitely settled before we can positively assert that the organism is able to build up hemoglobin out of inorganic iron:

A normally nourished mammal contains in its liver a certain store of organic iron compounds which unquestionably serve as a reserve material for the more or less continuous formation of blood going on in the body; and especially to supply the needs of the system whenever there arises any necessity for increase in the production of hemoglobin, as after loss of blood by bleeding, etc. This being so, we need to know whether the iron compounds found in the liver in increased amount after feeding with iron salts are identical with this normal reserve material. Secondly, is hemoglobin actually formed out of the iron compounds which result from the absorption of inorganic iron salts from the intestine?

These questions Kunkel has attempted to answer in the following manner: An animal was fed with an abundance of nourishing food containing all the elements necessary for the needs of the body, being deficient only in iron, and every week a quantity of blood was withdrawn sufficient to materially change the composition of the blood but not to endanger life nor interfere with functional power. The iron withdrawn after this manner with the blood was determined by chemical analysis. Pursuing such a method, it is easy to withdraw from the animal more iron than it can absorb from the food, thus rendering the body poor in iron and the blood poor in hemoglobin. Now, if, with such an animal, the feeding of inorganic salts results in the blood becoming normal again in its content of iron, it follows that the hemoglobin must be formed, indirectly at least, from the inorganic iron.

The food used in the experiments was exclusively cow's milk, which contains on an average only one milligramme of metallic iron per liter. The animals were two young dogs of the same litter, and with a body-weight of 2000 and 2300 grammes respectively. They were fed daily on 750 grammes of milk, on which they flourished and gained fat. Dog B received only the milk, while dog A was given daily in addition thirty drops of a solution of albuminate of iron, equivalent to 4.4 milligrammes of metallic iron. The experiment was continued through seven weeks, each animal being depleted of about one-third of its blood every week. In this way, at the end of the seven weeks each animal had lost about two and a half times as much blood as it possessed at the beginning of the experiment. The following abbreviated table gives a *résumé* of the results obtained from the analysis of the blood of the two animals:

DOG A, WITH IRON.

	Blood withdrawn.	Fe_2O_3 in the Blood.
First week	44.2 Gm.	0.0215 Gm.
Second week	45.9	0.0178
Third week	54.3	0.0162
Fourth week	58.1	0.0194
Fifth week	53.3	0.0194
Sixth week	59.6	0.0229
Seventh week	39.6	0.0138
	355.0	0.1340

Iron taken in six weeks, 0.30870 Gm. Fe_2O_3.
Iron taken in seven weeks, 0.36015 Gm. Fe_2O_3.

DOG B, WITHOUT IRON.

	Blood withdrawn.	Fe_2O_3 in the Blood.
First week	50.6 Gm.	0.0227 Gm.
Second week	54.2	0.0273
Third week	56.0	0.0145
Fourth week	63.3	0.0192
Fifth week	54.3	0.0127
Sixth week	51.0	0.0116
Seventh week	21.5	0.0042
	350.9	0.1122

Iron taken in six weeks, 0.04410 Gm. Fe_2O_3.
Iron taken in seven weeks, 0.05145 Gm. Fe_2O_3.

From these results it is seen that dog B lost in the blood withdrawn 112 milligrammes of ferric oxide, while in the food consumed during the period there was contained only 44 milligrammes of ferric oxide. In this animal anemia was very marked. Dog A,

on the other hand, which had lost somewhat more blood, containing in all 134 milligrammes of ferric oxide, showed no signs of anemia, a result which can be explained only on the assumption that the animal had absorbed a portion of the iron of the albuminate and utilized it for the production of new blood. This supposition is made still more probable by the following facts: One week after the withdrawal of the last portion of blood, both dogs were killed by ether and all the organs freed from blood by injecting through the aorta 0.8-per-cent. salt solution until the fluid came through colorless. While, obviously, all the blood cannot be removed in this manner, full seventy per cent. can be obtained. The blood and washings were then united and the content of iron determined, and the more important organs were likewise analyzed for iron, with the following results:

DOG A, WITH IRON.

Weight of the animal, 3150 Gm.

	Fe_2O_3
The blood contained	0.0404 Gm.
The liver contained	0.0317
The spleen contained	0.0043
The kidneys contained	0.0025
The ribs contained	0.0011

DOG B, WITHOUT IRON.

Weight of the animal, 3300 Gm.

	Fe_2O_3
The blood contained	0.0252 Gm.
The liver contained	0.0043
The spleen contained	0.0013
The kidneys contained	0.0014
The ribs contained	0.0001

These data, showing as they do such a marked difference in the amount of iron in the tissues of the two animals, are explainable only on the assumption that the dog A had absorbed a certain amount of the iron preparation given him with the food, utilizing it for the production of new hemoglobin.

Especially noteworthy is the comparatively large amount of iron found in the liver of the dog fed with the iron albuminate. It would seem to be plain that the liver has the power of picking up and retaining within its tissue a certain amount of iron which is destined to serve as a store of this material to aid in the manufacture of new blood whenever it is needed by the body. This view, indeed, is in close harmony with many facts—such, for example, as the liability to severe anemia after diseases of the liver.

Further, in the examination of the ribs of the two animals, the red medullary matter only being examined, it is to be noted that even macroscopically there was a wide difference in their appearance. Thus, in the dog A the medulla had the characteristic red color, while in dog B it was only faintly colored—a difference which is quite in harmony with the content of iron found on analysis.

Without considering the results more in detail, it is plain that Kunkel has given us some very interesting data, which seemingly verify the ability of the system to utilize such compounds as the albuminate of iron for the manufacture of hemoglobin and the production of new blood.

There is another matter brought out experimentally in these results, which is perhaps worthy of a moment's consideration, viz.: the wonderful power of reconstruction possessed by the system. Thus, the dog B in the first four bleedings lost 214 grammes of blood. Now, originally, before the animal was bled at all, the total amount of blood in the body could not have amounted to more than 170 grammes; hence, in these three to four weeks there must have been a reconstruction of blood amounting to a quantity considerably in excess of the whole volume present in the body at the beginning of the experiment. Yet the animal was able to accomplish all this in a short period of time without any noticeable deterioration or strain upon the system.

Whether inorganic iron is as readily utilized by the body in the production of hemoglobin as organic iron, such as ferruginous nucleo-albumins, hematogen, etc., is a question not considered in Kunkel's work, but plainly the animal body can make use of inorganic iron in the absence of any more favorable material to work with.

RHUS POISONING.

In the *American Journal of Pharmacy* for January, 1896, BERINGER tells us that he has been a sufferer from this poisoning for years, but that during the past summer washing the face and hands with solution of hydrogen dioxide has been adopted as a preventive, with apparently good results. Hot soda baths have also appeared to be efficacious in the treatment of the disease, and, for a topical application he prefers the following lotion:

℞ Sodium sulphite, granular, 1 drachm;
Glycerin, ½ fluidounce;
Camphor-water, q. s. ad fac 4 fluidounces.

LUPUS ERYTHEMATOSUS TREATED INTERNALLY WITH PHOSPHORUS.

In the *Boston Medical and Surgical Journal* of November 28, 1895, JENCHES, of Galena,

Illinois, records his views on this topic and after describing the general treatment of a case in hand goes on to say: All external treatment was now abandoned, and the patient was given a solution of phosphorus prepared as directed by Professor Berkley in his article in the *American Journal of the Medical Sciences* for April, 1893, namely:

℞ Phosphorus, gr. vi;
Absolute alcohol, ʒ xxx.

To be dissolved with the aid of heat and agitation, and then mixed, while still warm, with the following mixture, also warm:

Glycerin, ℥ ixss;
Alcohol, ℥ iss;
Essence of peppermint, ℥ ss.

Each drachm contains one-twentieth of a grain of phosphorus.

Of this, twenty drops were at first taken in water three times daily, after meals, but the dose was gradually increased until at one time it reached forty drops. This amount did not produce any gastric disturbance, but the large doses were only taken for a short time. A few weeks after the adoption of this medication, the burning and tenderness were observed to be gradually disappearing; and as the color began to fade, the patient frequently remarked, "Ich glaube sie heben die recht Arzenein gefunden."

At the end of the second month of treatment the improvement was very noticeable; the dull-red color, previously so conspicuous, was passing off. At the end of five months of treatment the improvement was so great that the patient considered himself cured. The red, inflamed, and infiltrated condition had disappeared; the integument over the diseased area had assumed quite a healthy appearance, although in places it was somewhat scarred; the livid line of demarcation which had separated the diseased from the healthy skin was no longer perceptible.

After several years of ineffectual external treatment the lesions had yielded to the internal administration of phosphorus.

In the article previously referred to, Professor Berkley states that chronic cases of lupus erythematosus seem as much benefited by this treatment as do acute cases.

Judging from the well known action of phosphorus on the nervous system, the writer is led to believe that the lesion is of neurotic origin. In administering phosphorus the action of the remedy upon the digestive organs should be carefully watched, and if unpleasant symptoms arise they should be promptly met by appropriate treatment.

THE PHARMACOLOGY OF THE IPECACUANHA ALKALOIDS.

The Manchester correspondent of the THERAPEUTIC GAZETTE contributes a valuable paper on this topic to the *Lancet* of November 23, 1895. He reminds us that the active principle of the ipecacuanha root, "emetine," has been known to chemists since the early part of the present century, and its physiological action has been investigated by Magendie and many subsequent observers. The experimental results have in some cases been discrepant and at times even contradictory, so that doubt still exists as to the precise nature of the so-called "emetine" and its action upon the tissues. Considerable light has recently been thrown upon the cause of these discrepancies by the researches of Paul and Cownley, who have shown that the ipecacuanha root contains at least two distinct alkaloids, and that these exist in variable relative proportions in different varieties of the plant. They have also shown that the so-called "emetine" previously obtained by different chemists was not always the same substance; that obtained by Glenard consisted of one of the two alkaloids, while other methods yielded variable mixtures. Paul and Cownley have succeeded in separating two bases, the one soluble and the other insoluble in caustic alkalies, and have named them cephaëline and emetine, respectively; the latter is identical with the emetine of Glenard. These alkaloids have been prepared in a pure state, carefully analyzed, and their salts studied. They possess a definite composition agreeing with the formula $C_{14}H_{20}NO_2$ for cephaëline, and $C_{15}H_{22}NO_2$ for emetine; the latter alkaloid is thus the methyl compound of the former, the chemical relation between them being similar to that existing between morphine and codeine or between caffeine and theobromine. It is important to determine whether both of these alkaloids are active principles, and if so whether their action is the same or different in kind or in degree.

Both cephaëline and emetine possess a powerful emetic action; the emetic dose of the latter is, however, about double that of the former. In non-emetic doses the degree of nausea produced by cephaëline is also about double that produced by emetine—*e. g.*, the intensity and duration of the nausea following five milligrammes of cephaëline was much the same as that following ten milligrammes of emetine. Both alkaloids lower the arterial tension; little difference is apparent be-

tween the effects of small doses in this respect, but the depression produced by the emetic dose of cephaëline is less than that produced by the larger emetic dose of emetine; cephaëline appears, therefore, to be distinctly preferable where a non-depressing emetic is desired.

Both alkaloids caused contraction of the blood-vessels after destruction of the brain and spinal cord, but emetine was distinctly more active than cephaëline: 1 in 10,000 of the latter produced little if any effect, while 1 in 20,000 of emetine was followed by marked contraction. On the heart no appreciable difference could be made out; both alkaloids produced slowing, weakening, and diastolic arrest of the isolated organ; recovery was easily effected when the poison was removed. It is doubtful whether the drugs in the doses administered to men would affect the heart directly; but the fact that 1 in 20,000 caused diastolic arrest in forty-six minutes renders caution necessary in giving larger doses of the alkaloids. Both acted as muscle poisons, but cephaëline had the greater toxic power, and also caused irritation of the motor nerve-endings and contracture. As to the secretions, salivation was well marked wherever there was nausea. Emetine caused a flow of watery mucus from the nasal mucous membrane when a full dose was given; this was not noticed after cephaëline. It is possible that the expectorant action of ipecacuanha is due to a similar action of emetine upon the other portions of the respiratory mucous membrane. Intestinal peristalsis and a loose motion at times followed the administration of either alkaloid; there was never any marked purgation. No effect was noticed upon the secretion of the skin or upon the amount of urine.

Assuming the correctness of the view that emetine is methylcephaëline, it would seem that the chief effect of the addition of the CH_3 group is to markedly reduce the action of the compound upon the convulsive or vomiting centre in the medulla oblongata, and also to diminish the irritating effect upon motor nerve-endings. The methyl compound has, on the other hand, a more powerful action as a local vaso-constrictor. The addition of the methyl group does not appear to affect the other actions of the alkaloid. With regard to therapeutic use, only accumulated clinical experience can determine their relative positions. It seems probable that in cephaëline we have a powerful and certain emetic, singularly free from depressing effects when given in doses of from five to ten milligrammes (one-twelfth to one-sixth of a grain); its action, however, is too slow to prove of much service in cases of poisoning, but in all other cases where emesis is desired it appears well worthy of trial. In acute catarrhal and febrile conditions, as an expectorant, and for all the uses of ipecacuanha where vomiting is not desired, emetine in small doses seems likely to prove of considerable value, and also as an emetic in larger doses of from ten to twenty milligrammes (one-sixth to one-third of a grain) when a more depressing action is required. The powerful local constricting effect upon blood-vessels may also prove useful in hyperemic and inflammatory conditions.

The wide variations in the activity of the pharmacopœial preparations of ipecacuanha may not unlikely be due to variations in the quantities and relative proportions of the alkaloids which they contain, and the use of the pure alkaloids may render one of our most valuable remedies of still greater service.

GASTRIC LAVAGE WITH A CONTINUOUS CURRENT.

HEMMETER, of Baltimore, in the *New York Medical Journal* of December 28, 1895, contributes an article with this title, and concludes that the use of the stomach-tube is contra-indicated in all constitutional and local diseases in which the disease could be aggravated or life endangered by the irritation and exertion of lavage. Among these could be mentioned: pregnancy (though this is not a disease); heart diseases, in a state of defective compensation—heart neuroses, angina pectoris, myocarditis, and fatty heart in advanced stage; aneurysm of the large arteries; recent hemorrhages of all kinds, including apoplexies, pulmonary, renal, vesical, gastric, and rectal hemorrhage, and hemorrhagic infarctions; advanced pulmonary tuberculosis; advanced pulmonary emphysema with bronchitis; apoplexy and cerebral hyperemia; advanced cachexia; presence of continued or remittent fever.

The stomach and intestinal diseases which Boas states are contra-indications of the use of the tube are: ulcer, with recent hematemesis and dark stools; palpable carcinoma of the pylorus, with vomiting of coffee-ground material and the classical symptoms of cancer; many gastric neuroses in which the character of the malady is clear without lavage; stomach or intestinal troubles with

acute fever; gastric mucosa easily started to bleeding; secondary gastric affections whose dependence upon a distinct and more important primary disease is evident.

These are not invariable rules, however; there may occur cases under some of these exceptions when, on account of depressing self-intoxication from the stomach or advanced gastric fermentation, lavage is peremptorily required. Thus, according to Boas, it has been employed with success in pregnancy, and the author once washed out the stomach in a case of typhoid fever, with favorable result, and also greatly relieved a case of aortic regurgitation with Bright's disease and gastrectasia by the same means. Professor Moritz, of Munich, has frequently passed the stomach-tube in pregnant women to ascertain the intra-gastric pressure.

Although gastric pathology is emerging more and more from empiricism, and approaching an exact science based upon chemical, physiological, and pathological facts, still much depends upon the experience and judgment of the physician.

ANTIPYRIN AND TANNIC ACID AS A STYPTIC.

The following is from an article by Dr. ROSWELL PARK, of Buffalo, which appeared in the *Medical News* of November 16, 1895:

"In the *Medical News* of December 15 and 22, 1894, I rehearsed some of my experiences with antipyrin as a styptic in surgical practice, stating that I had for years used a five-per-cent. solution as a spray, sterilizing the water before making the solution. This I had no hesitation in spraying upon any surface, peritoneal, cerebral, or other, from which parenchymatous oozing was taking place to an extent complicating the operation or jeopardizing the success of an ideal dressing. This therapeutic note attracted at least sufficient attention to lead to its pretty general use by surgeons in various parts of the country, from many of whom I have heard commendatory remarks, and from none of whom have I heard of disappointment in its use. The present note is to corroborate the favorable esteem in which I have long held this procedure, and to state that I have since resorted to it more widely and more generally for styptic purposes. Thus, I have no hesitation in using it in the urethra, or even in the bladder, in cases of hematuria proceeding from either of these locations. Even in the eye it may be used without fear, preceding its use by that of a weak solution of cocaine, though in this location the antipyrin solutions need not be made so strong. On the other hand, it may be used in much larger percentage when the five-per-cent. solution fails to accomplish the purpose; even when small vessels spurt, compression for a few moments with iodoform gauze or acetanilid gauze sopped in this solution will often be effective.

"As every physician will realize, there occur cases of bleeding—for instance, from the nasal cavity or from divided bone—in which even these solutions will be ineffective. My present object is to call attention to the combination of antipyrin and tannic acid, in solution, by which there is precipitated an intensely agglutinative and cohesive substance, of (to me) unknown chemical composition, which offers the most ideal styptic for certain purposes that I ever dreamed of. This combination I hit upon by accident, and first resorted to in a case of apparently intractable hemorrhage from removal of adenoid tissue in the vault of the pharynx, to which I was called in consultation by Dr. Hinkel. He happened to have at hand a bottle of alcoholic solution of tannin, while I was provided with antipyrin in powder. The case being urgent, I suggested the combination of the two styptics, and added the dry powder to the solution. To our surprise, there was formed at once a gummy mass, at first flocculent, which quickly cohered, the result being a combination the stickiness and adhesiveness of which quite astonished us. A small sponge dipped into the fluid containing this material in suspension was inserted into the post-nasal space, and hemorrhage instantly was checked, not to recur.

"I have since experimented with these materials, and have found that they may be united in almost any proportion with the formation of the gummy mass, and would suggest that the substances be mixed in proportion to the emergency of the case, and to the desire for little or much of the resulting compound. It is possible, by adding strong solutions, or by pouring the powder of one into the solution of the other, to precipitate so much of the agglutinative composition as to make a gum that may be placed about the margin of the bleeding bone—for instance, in operations upon the cranium. Or a small piece of sponge or cotton sopped in this material may be forced into a tooth-socket, or in various other ways its use may be made to result in benefit and satisfaction. There is but one attendant difficulty—it is so re-

markably cohesive that when the time comes for detachment or separation of the tampon it is difficult to remove it. It may be even necessary to wait a sufficient time for the formation of granulations and separation by natural processes."

TREATMENT OF TETANUS BY ANTITOXIN.

In concluding an article in the *Boston Medical and Surgical Journal* of January 16, 1896, WITHINGTON gives us a summary of the recent literature of this subject, as follows:

Among the first to apply practically to tetanus the principles announced by Behring regarding the immunizing power of serum derived from animals rendered immune by progressively increasing inoculations of the toxin of a given disease, were Professors Tizzoni and Catani, of Bologna, in the laboratory of the Italian Ministry of Agriculture, Industry, and Commerce. Their product, consisting of the dried serum of the horse thus treated with tetanus toxin, was the first preparation of this sort, so far as the author is aware, put upon the market. It was furnished to the medical profession in tubes containing 4.5 grammes of the dried powder, at a cost of about five dollars per gramme. Naturally it required considerable faith to induce men to embark in so expensive a therapeutic venture, as the dose advised was 2.25 grammes at the outset for a mild case and the whole bottle for a severe case, with subsequent doses *pro re nata*. This dried serum was to be diluted with ten volumes of sterile water for injection.

A vigorous controversy was waged between Tizzoni and Huebner regarding the immunizing strength of Tizzoni's product, in which Huebner claimed that the antitoxin was so weak that the cures referred to it were not in fact due to it, and that the solid form in which it was dispensed laid it open to serious objection on the score of positive sepsis.

From the cases, now not very rare, which have been reported as having been treated by this remedy, Withington has selected the following somewhat at random, but including unfavorable as well as favorable results:

Drs. Giusti and Bonaisati had a cure of tetanus by this serum in a soldier twenty-two years of age. He developed tetanus twenty-three days after receiving multiple injuries. Two days later he received his first injection, which was repeated twice daily for eight days, when he became convalescent.

Dr. Marriott had a patient, a butcher, age twenty-eight, who was wounded in the jaw on September 24. Symptoms of tetanus appeared on the 30th, and six days later the first dose of antitoxin (2.5 grammes, Tizzoni's solution) was administered In all about twelve grammes, in multiple doses, were given, covering a period of fourteen days. Patient was convalescent four weeks after the first appearance of his symptoms.

Dr. Firth treated a case of tetanus neonatorum, developing five days after birth, with antitoxin injections, the first being given on the eighth day. Four injections were made, aggregating two grammes; no relief was experienced, and the child died when ten days old, shortly after receiving an injection.

Evans reports the case of a boy of fourteen, cut on the right knee on June 8. Tetanic symptoms first appeared on July 16. Treatment by serum injections (Tizzoni's material) was begun on July 26. He received a number of injections between that date and August 9, aggregating less than 4.5 grammes, and was well soon after August 15.

Dr. Henry Percy Dean reports a case of traumatic tetanus, developing twenty-four days after a wound (but not necessarily so long after the infection, as the patient had been working in the ground with the wound insufficiently protected). The patient, sixteen years old, was given his first injection of 2.25 grammes of tetanus antitoxin, July 27, five days after his first symptoms; and between then and August 7 he received more than twenty-four injections, aggregating 15.75 grammes of the antitoxin. Recovery was completely established about September 1.

Von Hacker had two cases of tetanus which recovered under the use of Tizzoni's serum. The first, a groom, age twenty-two, developed tetanus three days after a wound of his hand; on the fourth day, injections of serum into the arm were begun, and these were continued till 8.88 grammes had been used. He was well eighteen days after the first injection. A boy, age fifteen, developed lock-jaw thirty-seven days after a wound of his thumb; five days later he received antitoxin for the first time, and after 4.05 grammes had been given and sixteen days after treatment was begun he was quite well.

Bauer reports a case of tetanus unsuccessfully treated by antitoxin. It was, as he points out, an exceptionally acute and fulminant case, therein differing from the subacute or chronic cases which had been generally reported by others as cured. His patient,

age twenty-six, had his first symptoms of tetanus July 11, seven days after a punctured wound of the sole. The next day, July 12, he was admitted to the hospital, and at 5 P.M. received an injection of 2.25 grammes of Tizzoni's material. Seven and a half hours later he died in a severe convulsion, probably from spasm of the diaphragm.

Another unfavorable result is that reported by Schwartz. The patient was admitted to the hospital July 29, after only two days' illness. On the 30th he received 2.25 grammes of Tizzoni's antitoxin, and five grammes at each of the three subsequent doses. Although he came in with severe convulsions, these gradually diminished and finally ceased altogether. But he died suddenly of cardiac paralysis. The curious thing about this case was that with the diminution and cessation of the spasms there was yet a constant increase of the temperature till it reached 40.3° C. just before death, and 41.1° C. one hour after death. This writer remarks that there are two types of death in tetanus: the one occurring at the height of the convulsive paroxysm; the other in which the convulsions decrease, with rapid rise of temperature and pulse just before death. He considers tetanus to be properly an afebrile or at most a subfebrile affection, except at this prelethal stage. In his own antitoxin case he queries if the abnormality of a high and continuously rising temperature is not referable in some way to the antitoxin used.

In the *Archives of Pediatrics* for December, 1895, Dr. J. Lewis Smith refers to four cases of tetanus neonatorum treated by Tizzoni's antitoxin, with incubation periods after birth respectively of two, nine, one, and seven days, of which only the last recovered. As to the general statistics of tetanus sero-therapy, he quotes a letter of Mr. Hewlett, which is perhaps the latest summary of the statistics, and which says: "I have been able to collect records of forty-two cases of tetanus treated with antitoxin, nearly all traumatic, and of these fifteen died and twenty-seven recovered, giving a mortality of about thirty-six per cent." (See THERAPEUTIC GAZETTE, December, 1895, page 811.)

THE OPERATIVE TREATMENT OF THE DISEASES OF THE ANTRUM OF HIGHMORE.

FREEMAN (*Journal of the American Medical Association*, Nov. 30, 1895) holds that when an empyema of the maxillary sinus is due to disease of a molar or bicuspid the tooth should be extracted under nitrous oxide gas, and the cavity reamed out to admit a tube four to six millimeters in diameter, thus enabling the surgeon freely to irrigate and medicate the cavity. The most desirable apparatus for drainage is a gold tube, with a collar fastening it securely to a neighboring tooth. Where it is necessary to clear up the diagnosis as to the presence or absence of a foreign body or growth, exploration through the canine fossa is proper. The opening should be large enough to allow the introduction of the finger, and is easily accomplished by means of a drill. After carefully exploring the cavity, removing any cause of irritation, curetting if necessary and breaking down bands, a light iodoform-gauze packing is applied. The author advocates packing daily with thymol gauze for a week, and then fitting an obturator of metal or hard rubber, which is held in position by the pressure of the cheek. Introduction of tubes of small calibre into the antrum for drainage is perfectly futile, since the muco-pus is too thick to escape through them.

The intra-nasal irrigation and drainage route is usually to be preferred to the oral. Treatment through the middle meatus is to be condemned. Operations through the wall beneath the inferior turbinal are of real value. Mikulicz makes an opening three-eighths of an inch broad by five-eighths of an inch long, far up under the inferior turbinal, where the wall is usually quite thin. Through this large opening the pus can drain quite freely into the nose, although the perforation is at times some distance above the floor of the antrum. It is not, however, an operation to be undertaken lightly, for the pain without total anesthesia is considerable, and the hemorrhage frequently demands tamponing of the nares for twenty-four or forty-eight hours. This operation is to be ranked with that through the canine fossa for severity, while it is inferior in that it allows no examination of the interior of the sinus. Even with so large an opening, some patients are unable to cleanse the cavity themselves.

Less objectionable, though still possessing serious drawbacks, is the method of Krause. He penetrates the outer wall of the inferior meatus far up and back with a strong curved trocar and cannula, washes the cavity once, and insufflates iodoform. But he puts nothing into the opening to maintain its patulency, and so every second day the cannula, armed with an obturator, must again be forced into

the cavity. If one considers how rapid the healing of such punctures is, and the great tendency there is for granulations to form, he will realize that this treatment constitutes really a series of operations which must be done under cocaine. Bloch objects on the ground that the opening is extremely difficult to find. While some of Krause's cases are cured in a few weeks, others require months of treatment, and few persons could be found in this country to submit to such an ordeal. Another objection is that the patients are unable to carry out the treatment themselves. Again, both Krause's and Mikulicz's instruments are too large to be used in making a trial puncture, so that the diagnosis in obscure cases must be confirmed by another method before undertaking theirs.

While many ingenious methods have been devised for the intra-nasal operations, one very important thing seems to have been overlooked, viz., a simple and practical means of keeping open the perforation, so that the treatment may be readily carried out by the patient as well as the physician. To overcome this objection has been the writer's principal aim in the operation presented below. In suspected cases of empyema it is often necessary to irrigate the cavity, as first proposed by Ziem, to determine whether pus be present. While he prefers to make the puncture through the alveolus, the majority of operators lean to the intra-nasal position. Lichtwitz goes so far as to make a trial puncture under the inferior turbinal, and, finding pus, operates on the sinus through the mouth. Following him, the author also uses a straight trocar and cannula, but, instead of making the opening in the Mikulicz-Krause position, he perforates low down and more anteriorly. The nasal duct lies thirty to thirty-five millimeters from the naso-labial junction, and, unless it opens in a furrow, its exit is high up under the turbinal. Freeman keeps close to the floor of the nasal fossa, which at times necessitates penetrating thicker bone, but this is quickly and almost painlessly done, and the disadvantage is compensated by entering the cavity near its bottom and thus securing better drainage, while the risk of injury to the tear-duct is avoided and a resting-place for the head of the tube is obtained inside the pyriform aperture. The inferior turbinal and naso-antral wall beneath it are first anesthetized with ten-per-cent. cocaine solution. Using special trocar and cannula, a few taps with the mallet cause it to penetrate the wall, the entrance into the antrum being unmistakably recognized by the absence of further resistance. Withdrawing the trocar, warm sterilized normal salt solution is at first gently, later with considerable force, syringed through the cavity. Should the water return perfectly clear, even after repeated flushing, the cannula can be removed and no harm results. The author emphasizes repeated flushing; in one case he used over a pint of water before obtaining a trace of pus, but finally washed out a pus cast of the cavity, the presence of which had caused a marked edema of the eyelids on that side. When pus is present, however, he does not remove it at once, but re-introduces the trocar, withdraws the cannula, slips a drainage-tube over the trocar till it penetrates the cavity, and, withdrawing the trocar, completes the washing of the sinus by syringing through a long silver tube which accurately fits the permanent tube. If pus is now obtained, the tube has been correctly placed. The antrum being thoroughly cleansed, air is blown through to dry it, and then an antiseptic powder is insufflated. The operation, including cocainization and treatment, takes but eight minutes, and few complain of any pain. The physician should treat the case for the first few days until the nose becomes accustomed to the tube; later the patient can learn in a minute to pass the wash-tube and cleanse the cavity for himself.

Before undertaking any operation on the antrum, its position should be determined by grasping the three points forming the antral triangle—the thumb in the canine fossa, the first finger on the malar process, and the second finger on the edge of the orbit. Within these boundaries must lie the antrum; and, knowing this, one can hardly go astray.

The set of instruments necessary for this operation consists of a trocar and cannula, silver drainage-tube, and a mallet; for irrigating the cavity, a wash-tube, syringe, and rubber tube with connections. The drainage-tube may readily be cut down to fit the case. The cannula is steel, as softer metal splits in penetrating thick bone. The wash-tube goes nearly through the drainage-tube in order to free it of any accumulations.

Among the many advantages of this operation are: (1) the ready acquiescence of the patient; (2) the celerity and the slight degree of pain with which it is done; (3) the completion in one short séance of the diagnosis by lavage and the operation for therapeutic purposes; (4) the small wound, and the loss of only a few drops of blood; (5)

the ease with which patients are able to treat the cavity themselves; and (6) the fact that total anesthesia, and therefore assistants, are unnecessary.

The disadvantage is that the cure is delayed beyond that reported for some of the other antral operations; but when once healed these cases do not seem to have the reported tendency to recur. With larger tubes the cases have done better, and by employing the Friedländer dry method of treatment the outlook is most promising. The cases which have resisted treatment, and which have shown no progressive tendency to improvement under irrigation, have usually revealed some cause for the continuance of suppuration on exploring through the canine fossa. The ease with which remedies may be applied to the antrum by this method is in its favor. Iodoform is out of the question in one's private practice, and Chiari denies that it gives the positive results claimed for it by Krause, Siebenmann, and others. All operators, however, acknowledge the excellent results obtained by packing the cavity with iodoform gauze, and Chiari packs it even through the 4- to 6-Mm. opening in the alveolus, which he recommends.

In closing, a few words of caution suggest themselves. Do not attempt to aspirate the cavity. The blood-vessels are but poorly supported, and, the normal openings being closed, the cavity may be cupped. Do not syringe with strong solutions of peroxide of hydrogen, as advised in many books. Even after the cavity has been irrigated, some pus remains, and the pressure from the liberated oxygen, except with very weak solution, causes intense pain.

Do not make an exploratory puncture through the alveolus where dental caries exists, or you may readily infect a healthy antrum.

OWEN (*Omaha Clinic*, vol. viii, No. 4) reports a number of cases of empyema of the maxillary sinus, and formulates the following rules for treatment:

In acute cases of mild type, all that is necessary, besides the removal of the cause, is the employment of the ordinary means for managing a severe coryza.

In acute cases of a severe type, dependent upon intra-nasal disease, besides the ordinary means as suggested, efforts should be made to irrigate the sinus through the normal orifice. Failing in this, the symptoms being urgent, and ordinary means having been exhausted, an opening should be made through the wall in the inferior meatus for drainage and irrigation. In the latter instance, if from some configuration of the part it is not possible to penetrate the antrum, a small opening for drainage and irrigation should be made between the roots of the second bicuspid and first molar if the first and second molars are sound, but if one is diseased and useless it should be drawn and the puncture made through the empty socket.

In all cases, acute or chronic, dependent upon diseased teeth, the teeth should be drawn and the antrum punctured through an empty alveolus.

In chronic cases, when the cause is in the nasal cavity, if polypoid degeneration of the mucous membrane, caries or necrosis of the wall be not apparent, the cause should first be removed, then irrigation through the natural opening should be given a fair trial. Failing to irrigate through the natural opening, or to cure by this means after a reasonable trial, a counter-puncture should be made in the inferior meatus for drainage and irrigation. A cure not having been reached in a few weeks by this method, a large opening should be made in the canine fossa for curettage and irrigation.

In long-standing aggravated cases, where degeneration of the mucous membrane, caries or necrosis, etc., is reasonably certain, besides the removal of the cause, a large opening should be made in the canine fossa for curettage, drainage, and irrigation, and a counter-opening made into the inferior meatus.

Frequent irrigations with a warm solution of boric acid should be the rule, and such other topical applications should be employed as the case may demand.

DIAGNOSIS AND TREATMENT OF FRACTURES OF THE UPPER THIRD OF THE FEMUR, INCLUDING THE NECK.

This subject, which is the first on the list selected for discussion by the Council of the Surgical Section of the British Medical Association (*British Medical Journal*, Oct. 12, 1895), is of especial practical interest, since there are few injuries in which accuracy of diagnosis is more important or more imperatively called for. It must be remembered that in such injuries many of the signs and symptoms of fracture may be present without the occurrence of such lesion, and, on the other hand, fractures may exist without many of these signs or symptoms.

STOKES, in opening the discussion, quoted Curling to the effect that in the majority of fractures in the capsule, the periosteum being torn, the circulation is diminished to a greater extent than in other descriptions of fracture, where one division of the bone is deprived of its nourishment from the medullary arteries. The loss, moreover, is not limited to its central structure, but the whole of the detached bone sometimes suffers, and the atrophy, instead of being merely eccentric, occurs throughout its texture—not only the cancelli enlarging, but the size of the head becoming insufficient to fill the acetabulum.

A similar process may result from impaired nutrition consequent on synovio-periosteal inflammation without fracture. Certain it is that atrophy of the cervix occurs after injury without fracture, thus proving not only a source of error in diagnosis, but also the cause of blame being unjustly attached to the surgeon for not recognizing the occurrence of a supposed fracture, the disappearance or diminution of the neck producing many of the apparent signs of this injury. The atrophy is essentially eccentric, the head of the femur sinks down upon its shaft, but "more commonly the texture remaining is brittle, and the bone gives way on receipt of even a trivial force."

This process of rapid absorption is, in the case of fracture, probably due, in the first place, to senile osteoporosis; and in the second place to the twofold action of the absorbents on the one hand, and friction of the broken fragments on the other; and in the case of contusion, to impaired nutrition consequent on a low form of synovio-periosteal inflammation.

The researches of Humphry and Charpy have apparently disposed of the commonly accepted belief that alteration in the angle between the axis of the cervix and the shaft is a frequently observed senile change, this being held to be one of the determining causes of fractures of the cervix in advanced periods of life. The author calls attention to the fact that inversion is sometimes noted in fractures of the neck. This, he believes, is due to the neck having been adducted and inverted at the time of the accident, and afterwards remaining in this position. Differentiation may, as a rule, be correctly made by bearing in mind that whereas in fracture we have usually a history of a direct fall on the trochanter, followed by eversion, shortening, and backward direction of the outer surface of the trochanter, occurring in advanced life, and with marked pain along the line of fracture, diminished tension of extensor muscles, occasional inversion, and that not well marked; in luxation, on the other hand, we have a history of forced rotation inwards, rarity of occurrence in advanced life, usual inversion, great shortening, approximation of trochanter to anterior superior spine, head of bone on dorsum ilii, movements difficult and restrained, absence of pain on trochanter, increased tension of extensor muscles, and constant, well marked inversion. In fractures of the brim of the acetabulum we have the head drawn upwards and backwards, with detached fragment of brim, shortening, inversion, crepitus, adduction, recurrence of shortening after extension is removed, and retained power of eversion and abduction of the limb. In fractures of the fundus we have usually comminution, head passing into the pelvis, shortening, liability to abscess-formations, and generally a fatal result. In contusions we have the normal relations between the anterior superior spine and trochanter preserved at first, but often ultimately lost, and the knowledge that pre-existing chronic rheumatism may in these cases accentuate the difficulty of differentiation in no small degree.

As to treatment, the author commends Senn's method, which consists in the application of a plaster cast with a screw arrangement by which a pad over the trochanter major keeps the fragments of bone in apposition. He has, however, had no experience with this method. Or, in place of this, he advises extension and lateral splints. Whatever appliance is used, provision should be made to enable the patient to sit up occasionally. Especially is this important in regard to aged patients. Extension should be not greater than will promote immobility.

The following conclusions are appended to the paper:

The alleged senile alteration in the angle between the axis of the cervix and the shaft of the femur does not occur, and cannot therefore be regarded, as it has hitherto been, as a predisposing cause of fracture of the cervix femoris.

The process of absorption in the case of fracture is probably due primarily to senile osteoporosis, and secondarily to the twofold action of the absorbents on the one hand and friction of the broken fragments on the other, and, in the case of contusion, to impaired nutrition consequent on a low form of synovio-periosteal inflammation.

In classifying fractures of the cervix or its base, a distinction should be made between those with and without penetration, and those with and without impaction.

Osseous union may take place in four out of the five different forms of fracture of the cervix femoris.

The further the fracture is from the base of the neck, the less is the probability of osseous union.

Fracture of the cervix may occur previous to epiphysial junction.

The differentiation of these injuries lies between fracture of the cervix or its base, luxation, fracture of acetabulum brim, of acetabular fundus, and contusion.

The principles of treatment should be fixation, rest, and moderate extension.

ACCESSIBLE SURGICAL TUBERCULOSIS.

McDill (*Chicago Medical Recorder*, October, 1895) contributes a valuable and exhaustive paper representing a study of the more recent literature of this subject. He states that the general treatment has remained unchanged in the last three years, the main remedy being Schuller's guaiacol treatment. Local treatment by parenchymatous and intra-articular injections, especially by the sterile iodoform ten-per-cent. emulsion in glycerin, has, in combination with conservative orthopedic and operative treatment, become firmly established as the modern treatment of surgical tuberculosis. The technique of injection is as follows:

Penetrate joints where most accessible, sliding the skin before puncturing to procure a valve-like arrangement to the tubular wound, and avoid traversing thinned skin with the cannula.

When tuberculous pus is present, always wash out through the cannula with five-per-cent. carbolic acid or saturated solution of boric acid before injecting.

Injections should be made at intervals of ten to twenty days. If manifest improvement does not occur after the third injection, the treatment is probably useless.

When diseased bone can be felt in connection with a tuberculous joint, bore into it in different places and make parenchymatous injections.

Absolute asepsis must be secured by five-minute scrubbing of the surface and the hands with absolute alcohol; boiled instruments to be taken from the water by the surgeon himself. Iodoform ten-per-cent. emulsion to be sterilized in the bottle in which it is mixed, by a one-hour's exposure to dry heat of about 300° F.

Senn's syringe is probably the best, or a large Pravaz syringe, which should be used for no other purpose.

General anesthesia is rarely necessary. Schleich's method suffices in almost every case where painless operation is desired. [See page 195.]

The amount of iodoform to be used varies with the lesion, but should, as a rule, never exceed six drachms of the ten-per-cent. emulsion.

Patients can usually be allowed to walk about at once; but if temperature rises in the first twenty-four hours they should remain quiet till it subsides.

Injections are quite useless when mixed infection has occurred. Iodoform intoxication almost never occurs. Danger from erosion of an artery in connection with the abscess has been observed, but is rare, and no other dangers are to be feared except accidental infection, which is from faulty asepsis.

The action of iodoform is most promising in the treatment of heretofore most hopeless cases. In the treatment of tubercular spondylitis and abscess the statistics show that nearly sixty per cent. are amenable to treatment, both abscess and primary inaccessible bone lesion being cured.

When operable tubercular affections are encountered, incise, and curette or excise tuberculous tissue and sequestra. Flood the wound with ten-per-cent. iodoform emulsion, and close tightly without drainage, as advocated by G. Neuber, of Kiel.

Injection is a most valuable preliminary treatment for subsequent operative measures. Watson Cheyne alone of recent writers "looks upon injections of iodoform as of doubtful value, but is inclined to think that upon the whole the cases in which it has been employed have done better than the others."

Bier's method of artificial venous engorgement by means of moderate elastic constriction has given excellent results, especially in unopened joint-tuberculosis and where the constriction was continuous. Some excellent cures have been made in cases of testicle and shoulder tuberculosis by interrupted congestion.

Koenig discusses 620 cases of knee tuberculosis, of which sixty-five per cent. died. He holds that a well healed leg after resection is, all things considered, the most useful in the end.

Extreme shortening and marked flexion may develop after simple arthrectomies. It is further of interest that Hueter's five-per-cent. carbolic-acid injections have given better results than the iodoform. In making iodoform injections into the knee-joint the leg is extended, the patella pressed upon, the trocar plunged in on a level with the upper border of the patella on the outer aspect of the joint, halting the point just below the patella. The contents of the cavity are evacuated, the joint is irrigated with five-per-cent. carbolic-acid solution, and iodoform is then driven in. Repeat every two weeks. Four to six injections are usually sufficient. Atrophy of leg and thigh from involuntary inactivity, and a tropho-neurotic condition, will usually persist.

Anchylosis following treatment should never be forcibly broken up. Iodoformized bone chips should be used in all cavities. Guaiacol should be continued three months to a year after operation, and ambulatory treatment should be instituted as soon as possible after any operation.

In injecting the hip with iodoform, Van Bunger makes two landmarks: first, the femoral artery as it passes over the body of the pubes; and second, the centre of the upper border of the great trochanter. A line is drawn from one point to the other, and where it crosses the inner border of the sartorius the trocar, if plunged directly backward, will reach the joint and femur-neck. The bony neck should be penetrated deeply for parenchymatous injection; then the needle should be withdrawn slightly and the capsule filled.

In Pott's disease, sixty per cent. yield to iodoform injections, which cure both abscess and primary osseous foci.

In tuberculosis of the anal region, marked anemia and proctitis are positive contra-indications to operation, as they are usually indicative of some severe and grave form of internal and inaccessible tuberculosis, usually of the intestinal mucous membrane. Operation by the Paquelin cautery is by far the best method, as it renders the wound both sterile and bloodless, whereby exploration of multiple fistulæ is possible.

PERITONEAL IRRIGATION AND DRAINAGE.

CORDIER (*American Journal of Obstetrics*, October, 1895), in a paper with the above title, reaches the following conclusions:

Drainage is a life-saving process when used properly.

To use it is not an admission on the part of the surgeon that his work during the operation was imperfect.

The use of the tube alone does not produce or leave any condition that favors the development of hernia.

The omentum or other structures do not become entangled in the openings of the tube.

A small-sized flint-glass tube with small openings and open end should always be selected for pelvic drainage.

The tube does not produce fecal fistulæ.

The tube shuold be used when in doubt as to the absence or presence of drainage indications.

To depend upon the microscope findings as to whether a given case should or should not be drained is seemingly scientific, but is neither necessary nor practicable.

Gauze drains rarely should be used, and always should be supplemented by a glass drain.

There is no danger of infecting the patient through the tube, if the attendant is properly instructed.

Where irrigation is indicated, drainage should be used. Many cases will require drainage where irrigation was not indicated.

The emptying of the tube and the time of its removal must be governed by the indications and progress of individual cases.

Irrigation with a normal saline solution cleanses more quickly and effectively than the most thorough sponging.

The irrigating fluid should not be too hot to be comfortably borne by the operator's hands.

THREE SUCCESSFUL CASES OF SPLENECTOMY.

BLAND SUTTON (London *Lancet*, No. 3764, 1895) reports three successful splenectomies. The first patient was a girl, age seventeen. The tumor had been present since the age of five. For two years it caused dragging sensations and was accompanied by jaundice. Leucocythemia was excluded by blood-examination. The spleen was exposed by an incision through the left semilunaris. The viscus extended from the diaphragm to the true pelvis, its extremity being in contact with the uterus. The slender parts of the gastro-splenic omentum were secured with plaited silk, the suspensory ligament was ligated, and the spleen cut. The gall-bladder was found to be larger and thicker than usual; the stomach was large and reached below the level of the umbilicus. The wound was

secured in triple layers, and the patient returned to bed. She left the hospital sixteen days after operation, entirely well. The spleen deprived of blood weighed 2½ lbs., and on microscopical examination was found to be fairly normal in structure.

The second case suffered from anemia—a girl of five years. The viscus, which weighed ten ounces, was removed. The patient recovered at once.

The third case was one of wandering spleen occurring in a woman of thirty-two. On opening the belly the spleen was found in the hollow of the sacrum; the pedicle around it was very thick and hard. It was transfixed and secured with four plaited silk ligatures. The detachment of the spleen was followed by an abundant flow of blood, and two forcible but narrow jets of arterial blood issued from the cut surface of the pedicle. The stump was retransfixed with three silk ligatures on the distal (spleen) side of the first row of sutures, and, as the open, everted mouths of two large arteries were visible on the face of the pedicle, these were ligated separately with silk. The patient rapidly convalesced.

SEVEN CASES OF AMPUTATION OF THE HIP-JOINT.

PAUL (*Liverpool Medico-Chirurgical Journal*, No. 29, 1895) reports seven cases of amputation of the hip-joint, with no mortality. In not one was the shock greater than after any other major operation. The author holds that hemorrhage is commonly the most important factor in the causation of shock following amputation, and the second factor is the combined effect of the extent and duration of the tissue-injury. These are often in proportion to the height of the amputation, but are not necessarily so. Since a hip-joint operation may be performed in about the same time as any major operation, and involves no more tissue, he concludes that the high mortality is due to the greater difficulty experienced in controlling hemorrhage. In his own cases he fixed Esmarch's tourniquet by a bandage passed over the shoulder and around the opposite hip. A large anterior flap was cut from without inwards, disarticulation was accomplished, and a shorter posterior flap was cut from within outwards. The femoral artery was always tied as soon as the anterior flap had been cut, from fear of accident. The tourniquet is applied over two strips of bandage placed in front and behind and carried around the innominate bone, being hitched above the crest of the ilium in front and the tuberosity of the ischium behind. Then the free ends of the bandages are carried back to the shoulder and hip, and tied sufficiently tight to prevent slipping when the limb is removed. This takes off some of the elastic strain from over the external iliac artery, so a roller bandage is pushed under the tourniquet at this spot to increase the pressure on the vessel.

In the first case amputation was performed because of discharging sinuses. The second was a girl of eleven, with chronic hip-joint disease; the liver extended to the umbilicus; the patient recovered and the lardaceous disease retrogressed. The third case was a girl aged twelve; amputation was performed for hip-joint disease, and she recovered. The fourth, a woman aged twenty, suffered from sarcoma of the knee; amputation was performed in the middle third of the thigh; six months later, re-amputation at the hip-joint for recurrence; the patient recovered from this operation, but later recurrence developed in the lungs. The fifth patient, a girl aged twelve, exhibited an old hip-joint disease, with exhaustion; with very little shock, she promptly recovered, but with sinuses. In the sixth case, a man aged forty, with sarcoma of the intermuscular fascia of the thigh, the size of a small cocoanut, an operation was performed in March, 1893; in January, 1895, the patient was still free from recurrence and well. The seventh patient exhibited extensive joint disease; he recovered promptly. The author in a note appends an eighth successful case.

PELVIC ABSCESS TREATED BY INCISION AND DRAINAGE.

WATKINS (*Maryland Medical Journal*, Oct. 5, 1895) reports a number of cases of pelvic abscess successfully treated by excision and drainage. The technique of the operation is as follows:

The patient is prepared as for vaginal hysterectomy. The abdomen should also be prepared on account of the possible necessity of a celiotomy. The patient is anesthetized and placed in the lithotomy position; the posterior vaginal wall is retracted by a Sims speculum, and the cervix drawn down with a double tenaculum forceps. The uterus is dilated, the uterine cavity explored, curetted, irrigated, and packed with gauze, if indicated. An incision about one inch long through the vaginal wall is made near the cervix, opposite

infected tissue, and the attention he bestows on the after-treatment.

Submucous injections of the diseased epiglottis, the aryepiglottic folds, the arytenoid region, etc., were first made by Krause and Heryng during the summer of 1886, and have been practiced more or less ever since.

Chappell speaks very highly of this method of treatment; he injects creosote in an oily vehicle.

Electrolysis is adapted for hard infiltration, especially in the ventricular bands, the excision of which is liable to give rise to hemorrhage. It has not many adherents, because of the difficulty of manipulation and the length of treatment necessary.

The galvano-cautery has still fewer followers, being superseded by the curettement.

Tracheotomy will always retain a prominent place in the surgical treatment of laryngeal tuberculosis, as it is the paramount duty of the physician, if he cannot cure, to give at least relief to the patient entrusted to his care.

SOME POINTS IN THE PRACTICE OF LITHOTRITY OR LITHOLAPAXY.

MR. HARRISON refers to several important points in connection with the treatment of stone, which he believes are not dealt with sufficiently in text-books. As regards sounding for stone, he has never seen harm arise therefrom in children, in women, or in men not beyond middle age; on the other hand, in elderly men with enlarged prostate, etc., it may lead to very serious consequences. In such cases he thinks it advisable to defer the sounding until it can be employed "with all the precautions and resources that a comfortable bed, an anesthetic, antiseptics and proper attention afford." Should a stone be discovered, he thinks it advisable to have everything ready to proceed at once to its removal.

The lithotrites should be of the finest make and material, and their breaking power should be carefully tested previous to using them. Mr. Harrison insists on the importance of having a fenestrated instrument, which crushes and disintegrates the organic as well as the inorganic constituents of the stone and facilitates the evacuation. He describes and gives a sketch of an instrument improved by having a short lever instead of a sliding button to convert the slide movement into a screw after the fragment has been caught, and also a corkscrew handle instead of the usual wheel handle.

As a rule, the lithotrite should not be withdrawn so long as any fragments can be readily seized and crushed, thus limiting as far as possible the number of introductions of the instrument. In regard to the evacuating catheters, he prefers curved instruments, but likes to have a straight one for some cases—*e. g.*, those with enlarged prostate. He uses a long copper probe, with a stop at the handle, to clear the catheter of any fragment impacted in the eye or in the tube itself. He has the catheters made with eyes larger than usual, their rim smoothly beveled.

When the urine is very offensive, and bacteria are present in large numbers, the author adopts Guyon's practice of washing out with a solution of silver nitrate (1 to 1000). This requires a glass or plated syringe.

For anesthesia Mr. Harrison prefers ether, preceded by nitrous oxide gas.

Before introducing the lithotrite, he passes an evacuator catheter, and washes out the bladder with warm boric lotion, leaving in about two or three ounces.

To make sure the mucous membrane of the bladder is not gripped by the lithotrite, Mr. Harrison mentions that a slight rotatory motion of the instrument can be readily performed if the stone only is grasped, but not if the bladder-wall has been seized.

Sometimes it is extremely difficult to make sure that every fragment of stone has been evacuated, and the author suggests several stratagems to help in this matter, such as alteration of the position of the patient's body, free irrigation of the bladder in the ordinary and reversed positions, concussion of the pelvis with the hand, and its elevation.

When ordinary lithotrity is not possible or advisable—as, for example, when the patient's condition will not warrant a prolonged operation, in cases of stricture of the urethra, and in some cases of enlarged prostate—Mr. Harrison performs the operation of perineal lithotrity. "The bladder is reached by puncturing the membranous urethra on a grooved staff in front of the prostate, so as to admit the index finger as for digital exploration of these parts. This being done, a pair of either straight or slightly curved crushing forceps—the circumference of which does not exceed an average index finger in measurement—is then passed into the bladder, and the stone is seized and broken into fragments." The operation is completed by washing out the fragments and inserting a drainage-tube, which is retained for a few days.

The author figures his crushing forceps,

which have a cutting rib on the blade, and a screw at the handle to aid the crushing.

Perineal lithotrity has the great advantage, in foul, unhealthy conditions of the bladder, of affording free drainage. It is also performed in very much less time than ordinary lithotrity, and is not nearly so serious an operation as supra-pubic cystotomy, although as large stones can be dealt with by perineal lithotrity as by the supra-pubic operation.—*Medical Chronicle*, October, 1895.

THE INFILTRATION METHOD OF ANESTHESIA (SCHLEICH'S).

The following are the solutions advised by Schleich (quoted by WURDEMANN in the *Journal of the American Medical Association*, Nov. 16, 1895) in the performance of his cutaneous infiltration:

Solution No. 1, Strong—for operation upon highly inflamed or hyperesthetic areas:

℞ Cocain. mur., gr. j;
Morph. mur., gr. ⅙;
Natr. chlor., gr. j;
Aq. dest., ad f℥j.
M. Sterilisat. adde sol. ac. carbol. 5-per-cent., gtt. ij.

Solution No. 2, Medium—for most operations:

℞ Cocain. mur., gr. ss;
Morph. mur., gr. ⅙;
Natr. chlor., gr. j;
Aq. dest., ad f℥j.
M. Sterilisat. adde sol. ac. carbol. 5-per-cent., gtt. ij.

Solution No. 3, Weak—for superficial operations upon nearly normal tissues:

℞ Cocain. mur., gr. 1-20;
Morph. mur., gr. 1-40;
Natr. chlor., gr. j;
Aq. dest., ad f℥j.
M. Sterilisat. adde sol. ac. carbol. 5-per-cent., gtt. ij.

The keeping qualities of these solutions are improved by the addition of three drops of trikresol to each prescription. Tablets, triturates and compressed tablets are made of these solutions by Parke, Davis & Co. of such strength that one should be dissolved in three ounces of boiled water.

The technique of the operation is as follows: The field of operation is made aseptic in the usual manner. Having the required formula, the solution aseptic and cold, we fill the sterilized hypodermic syringe; pinching the skin slightly between the thumb and forefinger of the left hand, the needle is then passed obliquely under the epidermis to the papillæ, intra-cutaneously, until the lumen is fully inserted. A few drops are then injected, thereby producing a white elevated wheal, the infiltration extending throughout the whole thickness of the skin. There is immediate and complete anesthesia throughout the extent of the infiltration, which lasts from ten to twenty minutes according to the density of the tissue so edematized. The needle is then reinserted, at the periphery of the wheal, and the area infiltrated to the required extent and depth. No tissue offers any deviation from the dictum: Every structure is made anesthetic that can be artificially edematized; this holds good for skin, mucous and synovial membrane, periosteum, fascia, muscle, lymph-glands, nerves, viscera, and even bone.

Anesthesia exists only within the area infiltrated by the solution; outside of that, normal sensation remains. In operations requiring extensive division of the skin and mucous membranes the first wheal is increased to the size of a dime by increased pressure on the piston, and the needle is then removed and reinserted at the periphery of the wheal, but still within it, and a new wheal raised. In this way the line of incision is marked out to any desired length or breadth. In general surgical operations we would then infiltrate the underlying tissues, by slowly pushing in the needle and injecting a few drops at a time until the deeper tissue is edematized.

By cooling the spot selected for the formation of the first wheal by ether or rhigolene spray, or on mucous membranes by touching the spot with a strong solution of carbolic acid or applying cocaine, the first injection may be made, if so desired, without even feeling the prick of the needle. This is seldom necessary, as a very fine needle may be inserted without pain even in very tender tissues, such as the eyelids. The succeeding injections may now be made without causing sensation. There is no sensation to the infiltration proper.

Where the tissues are inflamed, the sensibility is pathologically increased. Here it is indispensable that the infiltration be begun in sound tissue and carried over into the part to be operated upon. The dilated blood- and lymph-channels of the inflamed skin allow us to anesthetize quite a large spot from one puncture.

The injection should be done slowly at first, and when the infiltration is only felt by its tension we may rapidly flood the part to the required extent. Under no circumstances must fluid be primarily injected into an abscess, an exudation, or a pathological focus;

the only result is increased tension and pain. We must not lose sight of the cardinal fact that the anesthesia exists only within the area infiltrated by these solutions. The method rests principally on the production of a complete artificial edema of the tissues. Wherever we wish to operate with exact anesthesia, the field of operation must be tensely filled with the solution so that it exudes from the cut surface.

It should be remembered that our use of attenuated solutions of the narcotic drugs has nothing akin to the doctrine of the followers of the dogma "Similia similibus," etc. These statements may be readily substantiated by self-experimentation. Cocaine injections of solutions of the usual strengths (five to ten per cent.) are certainly far more dangerous to life than the administration of chloroform. The higher solutions of cocaine surely diminish the exudative process and retard the healing, and in some cases actually destroy the trophic filaments so that gangrene has been known to occur. Nothing of the sort has been found to result from the infiltration of the solutions recommended in this article. Anesthesia is complete and occurs immediately, and lasts long enough for almost any external operation. There is no objection at any time to repeating the injection if feeling should return during the operation. Indeed, we might safely operate for hours upon a small area if so inclined. The advantages of the method are also evident from its simplicity, safeness, and celerity.

The method has gained credence and is now in common use by many busy practitioners. Operations have been done, from the removal of ovarian tumors, and amputations, down to the opening of boils, without pain, and with satisfaction both to the physician and patient. The writer has personally operated upon the eyelids of half a hundred patients, as well as upon other parts of the body, under this form of anesthesia, while prosecuting the investigation. His first operation was upon a deep-seated felon. He has assisted at a number of circumcisions, excisions of tumors, and minor operations, making the injections himself. He has had reports from many surgeons in different portions of the United States, of the employment of this method for operations varying in severity from ingrowing toe-nail to hernia, in which the anesthesia has been satisfactory; healing has been by first intention, and in only three instances has he had reports in which it has been delayed.

RADICAL CURE OF HERNIA.

MOORE (*Australian Medical Journal*, vol. xvii, No. 6) thus quotes from the *Archiv für Chirurgie* Bassini's description of his operation:

In the oblique acquired inguinal hernia the patient is deeply anesthetized and then made thoroughly aseptic. The surgeon incises the skin of the affected inguino-scrotal region, lays bare the aponeurosis of the external oblique to an extent which corresponds to the inguinal canal (dissection of the hernia), exposes at the same time the pillars of the external abdominal ring; arrests the hemorrhage. This is the first stage of the operation.

In the second stage he divides the aponeurosis of the external oblique muscle from the external to the region of the internal abdominal opening, then separates upwards and downwards in the form of two flaps the external oblique aponeurosis, isolates and raises *in toto* the cord and the neck of the sac. Whilst holding the index finger under the structures mentioned he separates the neck of the sac up to the mouth of the hernia from the structures forming the cord. The separation is effected without great difficulty by means of blunt instruments, whether the case be one of acquired or congenital hernia. The separation of the neck of the sac must be carried into the iliac fossa—that is, above the mouth of the sac itself. He then at once separates the body and fundus of the sac and bends it outwards, opens the fundus and examines whether its contents present adhesions or not, and whether the omentum is thickened. If there are adhesions he separates them, and removes the omentum so far as is necessary. After pushing back the intestines he turns the sac (its neck), places a ligature on the further (abdominal) side of the mouth, and cuts away half a centimeter below the ligature. When the hernia is very large and the neck and mouth of the sac very broad, in addition to the simple ligature he applies below—that is, to the outer side of this—by transfixion, another ligature in two parts, in order to ensure the closure of the sac and to prevent the slipping of the ligature. The peritoneum, ligated in this way, draws itself back into the iliac fossa. With the extirpation of the sac, and the placing of the ligature on the further side of its mouth, ends the second stage of the operation.

In the third stage he turns away the isolated cord and draws it lightly upwards on to the abdominal wall. He does the same, if

necessary, with the testicle, which is drawn up out of the scrotum. With broad retractors he has the lower flap of the external oblique aponeurosis drawn downwards, the upper flap upwards, and in this way it is easy to expose the groove made by Poupart's ligament up to its posterior border, and a centimeter above the place where the cord passes out of the iliac fossa. Next he separates the outer border of the rectus abdominis muscle and the threefold layer which is formed by the internal oblique and transversalis muscles and the vertical fascia of Cooper from the aponeurosis of the external oblique and from the subserous adipose tissue, until the threefold layer can without difficulty be drawn near to the isolated posterior border of Poupart's ligament. After that is done he sutures with interrupted sutures these two parts together, a distance of five to seven centimeters from the pubic crest outwards to the cord, which is displaced outwards about a centimeter from the anterior superior spine of the ilium.. Herewith is the third stage of the operation completed, and the inner or abdominal opening and the posterior wall of the inguinal canal are restored.

In the above mentioned suturing, it is advisable to use silk and (separate) interrupted sutures, and to embrace two or three centimeters from the edge of the threefold musculo-aponeurotic layer. The two first sutures placed close to the pubis embrace also the outer border of the rectus abdominis muscle. When this stage of the operation is at an end, then one can see, if the patient is excited to vomit (Bassini tried this in his first fifty cases) that the inguinal region is in a position to resist the strongest intra-abdominal pressure, and that the threefold musculo-aponeurotic layer, fixed to Poupart's ligament, is tightly stretched and becomes hard and unyielding in its new position.

In the fourth stage of the operation, he places the cord back in its place, and the testicles also; unites with sutures the aponeurosis of the external oblique until the edges of the pillars of the ring are brought close to the cord; then unites the skin; and finally the dressings are applied. He uses drainage in none but very voluminous old hernias, where the dissection and isolation of the sac have been very difficult. In this way the inguinal canal is again restored, with an internal opening and a posterior wall, both formed by the threefold musculo-aponeurotic layer fixed to the posterior edge of the groove formed by Poupart's ligament, and with an anterior wall and a narrow external or subcutaneous opening formed by the united flaps of the aponeurosis of the external oblique. In the external inguinal hernia, especially if it has a considerable circumference, the inguinal canal loses its oblique direction; it is straight or almost straight. By the operation described, it again acquires its natural direction. The cord pushed lightly outwards now penetrates the thickness of the abdominal wall obliquely, at the place where the canal has been newly made. The lines of deep sutures do not correspond to one another; the posterior are under, the anterior over the cord.

CANCER OF THE RECTUM.

POWERS (*Journal of the American Medical Association*, Nov. 9, 1895), after detailing several cases operated upon by himself, states that in the future he will proceed after the osteoplastic method of Rydygier.

Much depends on a proper selection of cases. A large proportion of patients with cancer of the rectum, when first seen by the surgeon, will be found in too advanced a condition to warrant thought of cure. The disease progresses slowly and often reaches an advanced stage before the increasing occlusion of the gut seriously attracts the patient's attention.

The earliest possible diagnosis on the part of the family physician is of the greatest importance. These cases first come under the care of the general practitioner, and his examination should be most thorough. In no affection about the rectum should digital examination be omitted. The examining finger is of far greater value than instruments, so far as the region which lies within its reach is concerned. In case of a suspicious though indefinite ulceration, dilatation of the sphincter with removal of a small piece of the tumor for microscopic examination will be found of the greatest service. So long as the patient's condition warrants, we are not justified in leaving any measures undone which may aid in establishing a positive diagnosis. Cancer is not so very infrequent in patients under thirty years.

It is difficult to obtain the exact mortality attending extirpation of the rectum; in general it may be estimated at about twenty per cent. Before the introduction of the Kraske method it was something like fifty per cent. It will doubtless fall materially as the selection of cases and the operator's technique further improve.

Curtis collected statistics of 420 cases from eleven clinics, and found that without separating the perineal from the sacral operation the mortality was 15.5 per cent. It is without doubt greater in the sacral than in the perineal, as in the former the disease requiring operation is further advanced and the procedure itself is much more severe.

As regards the chief point in any operation for malignant disease—immunity from relapse,—the author gives no figures. Curtis, in 144 cases which had run over four years, found 21.5 per cent. of four-year cures. These were, however, both sacral and perineal operations, and more of the latter than of the former. Whatever the percentage of radical cures may be, it is sufficient to encourage surgeons in their attempts. So far as we now know, the only hope of cure in cancer lies in its early recognition and prompt and wide excision, and it is on these lines that progress must and will be made. Advance in the past ten years has been steady, and much ground has been gained. It is to be hoped that the future will give us a specific, be it in the line of serum or other therapy, against this most malign disease. At present, however, our trust must be placed in operative procedure, and in the accomplishment of lasting results the physician and the surgeon must cooperate.

RUPTURE OF THE PANCREAS.

LEITH (*Edinburgh Medical Journal*, November, 1895) has given careful study to the literature of rupture of the pancreas, and reports some cases. His first group includes those in which a fatal issue followed early upon injury; the symptoms were shock and collapse, and in no case did they point to the pancreas as the main seat of lesion. The absence of external lesions of the abdomen is important and not a little surprising. Diagnosis is impossible without laparotomy, although the nature and direction of the violence and the exact site of impact make a suspicion of the lesion possible. The anterior surface of the pancreas can be thoroughly explored by a vertical incision about three inches long, in the middle anterior line, or preferably a little to its left, in the epigastric region. If an electric lamp be placed in the interior of a Ferguson's speculum, both the organ and its covering peritoneum can be scrutinized.

Death is usually due to hemorrhage. The lesion is rarely the only one present; and since diagnosis is impossible, treatment must be expectant or must be founded upon an exploratory laparotomy. In case the latter operation has been performed, the hemorrhage may be arrested by pressure, and the ruptured ends brought close together by comparatively superficial sutures passing through little more than the peritoneal covering of the gland. The covering adheres so closely to the gland without the intervention of any fatty or other tissue that it is easy to bring the separated ends together by traction exerted alone upon the peritoneum. This procedure is, however, open to the objection that blood or pancreatic juice might collect between the ends and cause their separation again, and lead perhaps to cyst-formation or other trouble. Senn, from his experiments on animals, recommends that the ends of the ruptured gland be separately ligated previous to such suturing. This has the advantage of effectually arresting the hemorrhage and the outpouring of the pancreatic juice, and, further, the close approximation of the ends favors the rapid establishment of the nutrient vascular supply. He would first remove the necrosed portions of the gland. He found that ruptures treated in this way quickly healed, and that there was no danger to be apprehended from the distal part of the gland, as all such physiologically separated portions underwent simple atrophy and in no case led to cyst-formation.

The milder cases of pancreatic rupture may, and probably usually do, recover. Certainly autopsies prove that this result may occur. As a matter of clinical history it is well understood that after injury received in the epigastric region there may follow after a considerable interval of time a cyst in this region. Indeed, the large proportion of pancreatic cysts are held to be of traumatic origin, and a table of seventeen such is given. The earliest tumor appeared ten days after injury, the latest eight years. As to the method of forming these cysts, the following is Cathcart's explanation: "The injury causes a laceration of the gland. This is followed by extravasation of blood, and with this is mixed the pancreatic secretion from the torn ducts. Not only is a constantly increasing fluid thus added to the original hematoma, but the collection of fluid probably becomes irritating in character. It will thus tend to excite the formation of a capsule around it, and by chemical irritation and tension would gradually increase in size."

Wherever we have a collection of fluid about whose boundaries and connections we are somewhat in doubt, the natural tendency

is to evacuate the fluid with the least possible disturbance of parts. Hence we find that the first procedure adopted was an emptying of the cyst by means of aspiration. Experience has shown, however, that this is both ineffectual and dangerous. The cyst gradually refills, and attempts to secure its obliteration by means of the injection of iodine, etc., have been somewhat disastrous. A fatal peritonitis has resulted more than once; indeed, the simple aspiration itself has been followed by somewhat similar serious consequences, brought about doubtless by the rupture of the cyst-walls when thin, and the sudden escape of the contents into the peritoneal cavity.

Aspiration has thus been abandoned in favor of laparotomy, which is the favorite method of treatment at the present day. The cyst is brought forward to the anterior abdominal wall, incised, and emptied. Drainage is secured by means of a pancreatic fistula, which discharges for a variable time and then heals. This was the method employed in the seventeen recorded cases of traumatic cysts, in all of which except one it was successful. It has been followed with like success in many other cases. Krecke says that out of twenty-seven cases treated by section and drainage, all recovered; and out of six cases treated by dissecting out the cyst, three died.

The advisability of trying to dissect out the cyst is very doubtful. Excision may be easy in some cases, but will be difficult in most, and experience does not favor its recommendation.

The method of anterior incision and drainage, notwithstanding its success, is not altogether perfect. It has actually failed to cure in a few cases, and other objections may be urged against it. It is much more suitable for the somewhat movable cysts which come forward to the anterior abdominal wall. These are generally broader anteriorly than posteriorly, and are thus readily opened from the front. It is not nearly so suitable for that other division, which are somewhat sessile, broader posteriorly than anteriorly, and much less movable; these are not easily reached by an anterior incision, and, moreover, it is by no means easy to bring the wall of such a cyst forward to the anterior incision and thus to secure its safe evacuation. In addition we have to urge the obvious disadvantage of the anterior incision, alike for men and women, in so far as it interferes with the natural usefulness of the abdominal wall and provides for a drainage of the most imperfect character, allowing of a cure only after a more or less protracted period. Further, the possibility of the pancreatic fistula becoming permanent must not be entirely denied. Senn in his experiments found that it never occurred, but actual experience in the human subject does not quite bear this out. Gould, indeed, mentions a case in which not only did the pancreatic fistula remain permanent, but malignant disease appeared around it. It appears to be not only reasonable, but most advisable, that we seek for some method of reaching these cysts which shall be free from these objections.

Cathcart and Littlewood have spoken of the ease with which a counter-opening could be made posteriorly in these cases, and it occurred to the writer that they might be primarily reached and drained by posterior operation. He therefore verified this suggestion many times upon the cadaver. He found it much easier than he expected, to cut down upon the tail of the pancreas and lesser omental sac. A vertical incision, about three inches long, is made at the outer border of the left erector spinæ, beginning above the twelfth rib. After cutting through the skin and fascia, the thin fibres of the latissimus dorsi are first recognized, and then the strong fascia at the outer border of the erector. This is incised, and the upper border of the quadratus lumborum is next seen running downwards and outwards. The finger is inserted above it, and feels for the posterior surface of the kidney through the fat and cellular tissue. It then defines the position of the renal vessels. The tail of the pancreas and the posterio-lateral wall of the lesser omental sac lie just above and inside them, and by inserting a probe it is possible to enter the cavity of this sac at will, either through the mesocolon below the lower border of the pancreas, or through the posterior peritoneum above this gland, according to the upward obliquity given to the probe. In no case was the supra-renal capsule or any other structure in the neighborhood injured. When the lesser omental sac was distended with fluid, fluctuation could be distinctly felt by the exploring finger working upwards above the renal vessels, and fluid could be evacuated with ease by means of a drainage-tube, made to enter the sac with the help of a director and pair of dressing forceps. This procedure will be found to be quite as easy in cases of pancreatic cysts, and probably of others in this neighborhood. The cyst-wall may be in some cases thick, and thus a little difficult to penetrate, but that need not cause much trouble,

while the long-existent distention will have brought the cyst within more easy reach,—it may even extend downwards below the line of the renal vessels, and thus be reached by the surgeon whether he goes above or below these structures.

This method of reaching these cysts from behind was adopted by Mr. Cotterill with complete success in a case under his care. He entered the sac below the renal vessels. The patient is doing well. Others have adopted a posterior incision after an anterior one had failed. Thus, Gould mentioned that in a case where the cyst was fixed and could not be brought to the surface, with a finger in the cyst he cut down behind below the twelfth rib and drained it posteriorly. The fistula rapidly closed. A better proof could hardly be given of the advantages of the posterior incision. He would doubtless have easily reached the cyst had he tried the posterior incision at first. He would strongly advocate this method of procedure, not only because of its ease, but because of the advantages of a posterior over an anterior incision, and of the more perfect drainage and much more rapid convalescence and cure which it promises. Even if it were to fail to reach the cyst, it would in no way prejudice the success of an anterior exploration, and would, moreover, even in such a case allow the rapid establishment of posterior drainage.

THE TREATMENT OF SOFT CHANCRE.

The following treatment is recommended by *La Tribune Médicale*, No. 28, 1895: Every morning the ulceration should be touched with a tampon of cotton wet in this solution:

Menthol, gr. j;
Carbolic acid, gr. v;
Alcohol, f3 iss.

Aristol is next dusted on, and a piece of absorbent cotton applied, thus completing the dressing. The patient is directed to wash the sore several times with carbolic-acid solution and to dust with aristol. All friction or causes of congestion are to be avoided.

Phagedenic ulcer is touched with solution made up of:

Cocaine, gr. j;
Potassio-tartrate of iron, gr. xv;
Distilled water, f3 iss.

It is next powdered with a mixture of 20 parts iodoform aud 5 parts menthol; and potassio-tartrate of iron is given internally.

OPERATION FOR THE RADICAL CURE OF HYDROCELE BY EXCISION OF THE SAC.

LOCKWOOD (London *Lancet*, Oct. 19, 1895) states that excision of the sac may be rendered an aseptic process, and seems to afford an excellent prospect of success. It is reasonable to suppose that the removal of about nine-tenths of the diseased secreting membrane, and the exposure of what is left to the loose cellular tissue of the scrotum, could hardly be followed by a reaccumulation of the hydrocele fluid. The results of the operation will go far to show that this assumption is correct. And here it is to be said that the title of this paper is not strictly applicable to the operation performed upon ordinary hydroceles of the tunica vaginalis. For the cure of these, only the parietal layer of the tunica vaginalis has been excised, but in encysted hydrocele the whole sac is cut away. He has excised the whole of the parietal layer of the tunica vaginalis twenty-four times for the cure of hydrocele, and once for hematocele. No attempt was made to select the cases. The youngest was sixteen years old, the oldest sixty-eight. Some could hardly be considered good subjects for an operation. One patient, a man aged forty-one, had been a heavy drinker; his face was covered with acne rosacea; he had a high-tension pulse and probably some aortic stenosis, and his urine contained a trace of albumin. He took ether well, and suffered no apparent harm from the operation. A man aged sixty-three, who had acne, admitted that he drank; another, who was a plumber, suffered from lead poisoning; several had chronic bronchitis—a very objectionable complication on account of the anesthetic, and one that can best be overcome by choosing the warm months of the year for the operation, and by skillful administration of the anesthetic. In several cases the hydrocele was accompanied by other affections. In one, a hydrocele on the right side and a varicocele on the left were operated upon at the same time. In another, both sides were operated upon at the same time, the hydrocele being double. In another case the presence of an acquired hernia upon the same side as the hydrocele made no difference. A man who had a hydrocele and organic strictures of the urethra was operated upon first for the cure of the hydrocele, and a week later for the cure of the strictures; the last operation was followed by orchitis. In one case the hydrocele was

bilocular; the testicle was surrounded by an ordinary hydrocele of the tunica vaginalis, and a second large sac (full of about half a pint of clear yellow fluid) lay above the head of the epididymis. Both sacs were treated in the usual manner, the upper one being entirely removed.

The operation was performed for various reasons—in some because of the size and weight of the hydrocele; in others for pain and discomfort, especially while riding horseback; in still others, to enable the patients to enter the army or other public services. One patient was by the operation enabled to wear a truss for hernia which was unsuitable for radical cure. Some of the patients had become weary of being tapped—one man had been tapped twenty-four times. One patient was alarmed because his hydrocele had been burst at football. This accident had not brought about a cure, as happened to a man the writer saw under Mr. Rutlin's care, and of whom it is stated that his hydrocele had been burst by the wheel of a wagon passing over it. Another reason might influence the decision as to the desirability of operation: the author has observed that in large hydroceles of long duration the testicle has become flattened out and wasted, and apparently useless; in some of the operative cases the gland was considerably altered, the epididymis having become separated from the body of the testis.

Before operating for the radical cure of hydrocele by excision of the sac, it is, as a rule, advisable to tap once to ascertain the condition of the testis. It would be disappointing to find a gumma, or a mass of tubercle, or even a malignant growth. Inasmuch as the fluid in a hydrocele is quite thin, like water, a very small trocar and cannula suffice for the tapping. A cannula two millimeters in diameter is quite large enough. The instrument usually figured in text-books is a relic of mediæval surgery. Strange to say, one of the cases upon whom the writer intended to operate underwent a spontaneous cure. A man aged sixty-five came in January, 1894, with a hydrocele of two years' duration, which had been tapped five times. He had bronchitis, so the hydrocele was tapped again and the patient told to come in June to be cured. He returned in June with no trace of hydrocele, and said that after the tapping the sac had rapidly refilled and then got quickly well. He has remained quite well of his hydrocele up to the date of this paper.

The operation of excision of the parietal layer of the tunica vaginalis is exceedingly simple. An incision is made the whole length of the long axis of the hydrocele. The sac is exposed and separated from the scrotum until the spermatic vessels are almost in view. It matters little if the testicle is entirely withdrawn from the scrotum. A puncture is made to let out the hydrocele fluid. This small opening is enlarged to admit the finger to ascertain the position of the testicle, epididymis, and vas deferens. Occasionally the vas is upon the front of the sac, having been displaced. The testis, too, is sometimes in front, as in one of the author's cases. As a rule this point will have been cleared up before the operation is begun; but when the sac is thick the shadow of the testis cannot be seen. The finger in the sac also makes out the exact limits of the epididymis and of the testicle; in big old hydroceles these organs are flattened out and sometimes pulled apart. In one of the author's cases the epididymis, separated from the testicle, lay almost in front of the sac.

These points having been cleared up, the whole of the parietal layer of the tunica vaginalis is cut away to within a quarter of an inch of the testicle and epididymis. Much misconception seems to exist as to the quantity of tunica vaginalis which is taken away. The writer is continually asked whether the visceral layer is dissected off the testis and epididymis. Sometimes in very big hydroceles the tunica vaginalis runs up the front of the spermatic cord. This prolongation must be thoroughly removed.

The arrest of hemorrhage is of the utmost importance in this as in other operations upon the scrotum. A hematoma easily forms in the scrotum and detracts considerably from the comfort of the patient and from the success of the operation. In one of the author's cases no vessel required ligature, but as a rule eight or twelve have to be secured with fine twisted silk. As a further provision against a hematoma, a large drainage-tube is laid along the depths of the wound and brought out at its upper angle. The rest of the skin incision is closed with fishing-gut sutures placed about a third of an inch apart. Trouble expended in obtaining accurate apposition of the wound is well repaid.

The skin of the scrotum heals with great rapidity, and the union becomes quite strong in a week. It may be observed that no caustic is applied to the visceral layer of the tunica vaginalis, which is, of course, left behind. Such applications are not required, and they

would increase the pain and also cause orchitis.

Twenty-four hydroceles were treated in this way. In addition a hematocele was met with, and received the same treatment. After all the blood and clot had been taken away, the whole of the parietal layer of the tunica vaginalis was excised. The after-treatment was the same as that of the hydrocele cases, and will be described presently. Repair was rapid, and the after-result left nothing to be desired.

The writer describes his aseptic precautions as follows: The evening before the operation the patient is thoroughly shaved and has a hot bath, with abundant soaping and scrubbing. The skin, having been thus cleansed as far as practicable, is further prepared by the extraction of its fatty matter with ether or turpentine. It is disinfected by being washed for two minutes with a 1:500 solution of biniodide of mercury in rectified or methylated spirit. This is washed away with biniodide-of-mercury solution (1:2000), and the skin is covered with carbolic gauze wet with the same lotion. It is advisable to add some glycerin to this lotion to help to keep the covering moist and assist the chemical to penetrate the skin. It is usual, also, to give a mild purge the night before the operation. These precautions are used for hospital patients; but for others less drastic measures usually suffice.

Very few instruments are required; a knife, a pair of scissors, a needle, and a few pairs of pressure forceps are all that is necessary. These, together with the drainage-tube, are sterilized by boiling for a quarter of an hour. Fine twisted silk (No. o size) is used to ligate bleeding vessels, and fishing-gut for closing the incision. These are also sterilized by boiling, and together with the instruments are afterwards kept in freshly made carbolic solution (1:40).

After the patient has been anesthetized; the field of operation is prepared by removing the protective dressing and thoroughly wrapping up the penis in carbolic gauze which has been soaked in biniodide-of-mercury lotion (1:2000). This "phallic shield" is of the greatest importance in this and other operations about the genital organs, especially in operations for varicocele and for the radical cure of hernia. The area of operation is surrounded with towels sterilized by boiling or steaming for half an hour, and kept wet with 1:40 carbolic lotion. One of these towels is passed across the thighs and under the hydrocele to support it. Before making the incision the skin receives a final swabbing with alcohol and biniodide, and is then sluiced with 1:2000 biniodide-of-mercury lotion, which is used throughout the operation. Sponges are prepared by the sulphurous-acid method.

The wound is dressed as follows: After a thorough dusting with iodoform crystals, the scrotum is covered with a layer of five-per-cent. carbolic gauze soaked in biniodide-of-mercury lotion (1:2000). This is covered with alembroth wool, and an outside dressing applied. The outside dressing is the usual eight-fold layer of carbolic gauze, with a covering of jaconet. It is accurately cut, and fitted with great care. It is triangular, with an aperture near the base for the penis to pass through. To the apex of the triangle two strong bands are fixed. When the dressing is in position these bands hold its apex against the perineum and are carried round the thighs to meet the pelvic band in front—this is a similar band of soft material which is fastened to the other angles of the dressing. The bands secure the dressing firmly in position by being carried round the pelvis. The straps are best made of stout bandage or of webbing. After they have been pulled tight a little extra alembroth wool may be stuffed beneath the dressing to exclude air and make some pressure upon the scrotum.

The after-treatment of these cases is simple and uniform. After the anesthesia has passed off, any light diet may be given, and the minor indulgences need not be stopped. The dressing is taken off at the end of forty-eight hours for the removal of the drainage-tube. This is done with the same precautions as those used for the operation. On the seventh or eighth day the dressing is finally removed and a suspensory bandage of linen applied. The patient now gets up to lie on a couch, and is able to begin work again within a fortnight.

The immediate results of excision of the parietal layer of the tunica vaginalis seem to leave little to be desired. The asepsis, which is so essential to safety, seems easy to secure. Only one of the cases had subacute suppuration, which was by no means severe. Owing to his physical conformation, urine escaped several times into the dressing. An endeavor was made to shut off the wound with iodoform, collodion, etc. Seven months after the operation he was quite cured, and, except for the scar, it would be impossible to find anything abnormal.

Examination of cases which have been

operated upon shows that the scar of the incision is hardly visible. The testicle slips about quite freely within the scrotum. The gland in most cases is larger than its fellow, but quite soft and painless. The author has observed this slight enlargement in cases which have been cured by iodine. It has probably nothing to do with the operation, but is related in some way to the hydrocele.

NOTES ON RETENTION OF URINE FROM URETHRAL STRICTURE.

GOULEY (*Journal of the American Medical Association*, Dec. 21, 1895) recalls attention to some of the ready and simple methods of relieving sufferers from the distress caused by retention of urine due to urethral stricture. This kind of urinary retention is seldom sudden; it is ordinarily preceded by difficult urination, whose increase—from month to month, from week to week, from day to day—is proportionate to the diminution of the urethral calibre at the diseased point, and also to the degree of muscular spasm of that part of the canal. For several weeks prior to complete retention, although urination be very frequent, the bladder is not emptied; this constitutes incomplete retention of urine which, from its stagnant state, soon gives rise to cystitis. At length the urine ceases to flow; there is then complete retention. This urine, accumulating for thirty-six or forty-eight hours, begins to slobber involuntarily, when the complete relapses into incomplete retention.

The laity often regard involuntary escape of urine as cause rather than effect, and endeavor to repress the "undue flow" by sundry processes which, fortunately, prove ineffectual. Meanwhile the vesical distention increases, and, unless the patient invokes a physician's assistance without further delay, the urethra is likely to burst behind the stricture and give issue to the urine, which infiltrates and destroys the connective tissue of the perineum and scrotum. In rarer instances of inordinate vesical distention, a fall, a sudden movement of the body, or a violent struggle during anesthesia has been known to cause rupture of the bladder.

Long-standing incomplete retention of urine, with spasm of the bladder, is much more serious than the retention which becomes complete in the course of a few weeks, for in the first-named condition the upper urinary organs are often irreparably damaged, and the prognosis is generally unfavorable. It is before the advent of these untoward effects that the greatest good is to be accomplished. Therefore, experienced physicians recommend the early treatment of stricture as preventive of retention of urine and its ill-consequences; but their instructions are seldom followed, and the responsibility rests with all unruly patients who are apt to seek advice at the last moment, when the bladder is distended to its utmost degree and the suffering is more than can be longer endured, even by the most stolid of men, after divers nostrums have been tried and found wanting in efficacy.

It is too common in such cases to resort to cutting operations, which are indicated only after failure of careful catheterism with filiform bougies, or after repeated supra-pubic capillary puncture of the bladder and aspiration of the urine. In ordinary cases it is possible to give prompt relief by making some preliminary dilatation of the stricture; beginning with a No. 1 soft, olive-pointed bougie, and continuing the dilating process by passing successively Nos. 2, 4, 6, and 8, after which it will be easy to use a No. 7 curved web-catheter that serves to allow the urine to flow slowly until about two-thirds of the amount contained in the bladder shall have escaped. The catheter is then plugged at its free extremity, is fastened in position, but is not retained more than thirty-six hours, during which time some urine is drawn off every three hours, and the bladder is finally emptied a few moments before the instrument is withdrawn. After this the stricture is gradually dilated by using bougies of increasing size every third or fourth day until the normal calibre and suppleness of the urethra are restored. Without preliminary dilatation by means of small bougies, it is usually difficult and often impossible to introduce a necessarily small web-catheter, by reason of its undue flexibility as soon as it becomes warmed in the urethra. The insertion of a metallic stylet in a small web-catheter is not prudent, on account of the possibility of perforating the instrument and the urethra, even when the manipulations are carefully and gently conducted.

Any stricture amenable to the method of treatment above described may be regarded as an easy case. The physician is, however, liable to be called to minister to cases that are not manageable with regulation bougies.

The difficult cases are those of very narrow, eccentric, tortuous, dense and resilient strictures, which are accompanied by inordi

nate spasm of the muscular layers, and are seated in the perineal region of the urethra. A second narrowing in the penile region is generally a troublesome complication which often necessitates internal urethrotomy.

A debauch, in wine or venery, is commonly the excitant of complete retention of urine. In such a case the urethral mucous membrane is likely to be swollen and sensitive, and to bleed freely as soon as a bougie is passed. As a general rule, when catheterism is not deemed expedient, the bladder is punctured above the pubes with a hollow needle, through which the urine is aspirated, and if necessary the operation is repeated until suitable instruments can be used to treat the stricture.

One of the simple and ready methods of entering a narrow stricture whose lumen is eccentric, is by means of a filiform probe-pointed whalebone bougie, elbowed at its extremity. This instrument is used as an explorer of the narrowed canal, and is quickly passed through the stricture in nine out of ten difficult cases, and serves as a conductor for a No. 1 or a No. 2 conical curved steel staff, grooved along its convexity, and having a canal or tunnel two or three millimeters in length, beginning at the blunt point of the instrument and ending in its groove. Through this canal is threaded the bougie, which guides the staff into the stricture, dilating it sufficiently to permit the introduction of a larger tunneled sound, then a third, fourth, fifth, and so on, until divulsion occurs. After this a tunneled catheter is substituted and enough urine is drawn off to relieve the distress caused by distention. The bladder is not completely emptied until the second day. The object of delay in emptying the bladder is to guard against vesical hemorrhage, which is so likely to occur after the sudden withdrawal of all the urine in cases of long-standing distention of the viscus, particularly in elderly men.

It sometimes happens that stricture is so dense that it cannot be dilated by the tunneled sound beyond No. 2 or 3. In that case a tunneled catheter No. 2 or 3 is substituted, and through this instrument the urine may be aspirated if necessary. Then a small web-catheter is passed and fastened in position for forty-eight hours, during which time the urine is allowed to trickle out, partly through and partly beside the instrument. On the third day it is generally possible to carry on dilatation with less difficulty, and, if needed, the process of continuous dilatation may be repeated until the stricture shall admit a bougie of the size of the normal calibre of the urethra. When, however, a stricture seated in the perineal region cannot be entered with any kind of bougie, after repeated trials, it is proper to resort to its external division, with the double object of curing it and of relieving the distended bladder.

For some years past there has been a pernicious fashion of dilating the strictured urethra to an excessive extent, and of using the dilators with undue frequency. In the many cases so treated the consequence has been a total loss of the urethral suppleness, due to subacute urethritis, with extensive infiltration of round cells and their subsequent transformation into scar tissue, so that the canal, although greatly increased in calibre, is in a state of permanent contracture.

Men of dissolute habits seldom return for radical treatment until they are again suffering from retention of urine. Narrow, resilient strictures are not permanently cured by any method of treatment whatsoever, unless the treatment is followed by the persistent use of dilating instruments, once every week or ten days, for at least three years. Some patients need the use of such instruments for many years, if not for life.

WHY IS THE ABDOMEN OPENED IN THE MIDDLE LINE?

RAMSAY (*Lancet*, Nov. 30, 1895) publishes a brief note under this query. In text-books on abdominal operations the linea alba is always recommended as the proper site for the incision, or, in default, the linea semilunaris. From this fact, and from the unanimity of opinion which appears to be held by operators on the subject, one would naturally suppose there must be some great advantage to be obtained from opening the abdomen in one or other of these situations. Inquiry develops the following: (1) Vascularity is low in the middle line, and therefore the hemorrhage is less; (2) there are fewer and less important structures to cut through; and (3) there is greater facility of access to all parts of the abdominal cavity. As regards the first point, this advantage is imaginary and really a disadvantage, for, although the abdominal wall is more vascular in other situations, there is never any hemorrhage in incising it that cannot be easily and speedily controlled, and, moreover, it is this absence of vascularity which tends to delay rapid and permanent healing, and therefore predisposes to hernia. The absence of important structures is also a disadvantage, for the whole

depth of the incision being through tendinous or fibrous layers having a great similarity to one another renders it difficult, especially to young operators, to know exactly the depth of the incision. This is especially the case when there has been inflammatory action. It is difficult to get the layers exactly together again, and they always cohere, so that the depth of the scar when found is barely one-eighth of an inch thick. This is noticed especially when making an incision through the scar of a previous incision. The third point is the only valid argument that can be used in favor of the median incision, and, as the author attempts to show, even this is rather theoretical than practical.

A disadvantage of the median incision is that, should it be necessary to extend it upwards, the umbilicus comes in the way, and as this cannot be rendered aseptic with certainty it has to be avoided and the incision deflected, while some operators remove the umbilicus entirely. This being so, is there any situation in the abdominal wall which offers further advantages without these disadvantages?

The ideal incision for abdominal section is one vertically through the middle of the rectus muscle on either side, and for the following reasons: (1) Although the parts are vascular, there is no hemorrhage; if the epigastric artery is cut, it is easily secured, and this vascularity tends to rapid and efficient healing; (2) there is no injury to the muscle, for after the fascia is divided the muscular fibres are easily separated with a director and retracted; (3) the incision can be made in any part of the muscle and continued up to the ribs or down to the pubes in the same manner; (4) the umbilicus gives rise to no inconvenience; (5) the layers are so well marked that it is impossible with ordinary care to wound the viscera; (6) access to all parts of the abdominal cavity is just as easy as in the middle line (this the writer has found from experience, whilst in some cases, where tubal or ovarian disease is known to be only on one side, it is an advantage to have the incision slightly on that side); (7) the scar left looks as if there had been a skin incision only—it does not pucker or dip in like the ordinary scar, and the separate layers are not coherent; (8) most important of all, if the wound is properly closed the risk of hernia is reduced to the least possible minimum. The best method is to close the wound with silkworm-gut sutures, running through all the layers. These are placed *in situ* and held by forceps; then the peritoneum and posterior layer of fascia are brought together with fine silk sutures, either continuous or interrupted, and then the anterior layer of fascia in the same manner. This brings the muscle firmly together, making the passage through its fibres valvular, restores the natural thickness of the abdominal wall, and prevents coherence of the fascial layers, leaving the abdominal wall in as good a condition as before the operation. Should temporary drainage be essential, necessary sutures should be placed *in situ* and marked with knots. They can then be drawn and tied accurately when the tube is withdrawn. Even if drainage has to be continued for some time, the track running through a thick wall will close better and more firmly and be less likely to give way afterwards.

The author has adopted this incision during the past two months in five cases—viz., two ovariotomies, one tubal gestation, one pelvic abscess, and one cholecystotomy—and has found that these advantages claimed are real and practical. He believes students should be taught that the one place to be avoided in opening the abdomen is the linea alba.

TREATMENT OF MALIGNANT TUMOR.

In a discussion on malignant tumor, held before the New York State Medical Association, SYMS (*New York Medical Journal*, Dec. 21, 1895) advised total removal *en masse* of the growth, together with the surrounding zone of healthy tissue, including the neighboring lymphatic system.

WIEGAN quoted Bull's and Dennis's recent statistics on the radical removal of carcinoma of the breast, which resulted in twenty-five to twenty-six per cent. of the patients passing the three-year limit without a recurrence.

DENNIS called attention to the value of subsequent constitutional treatment and of long surveillance of every patient after operation. He said that but little was to be expected from the administration of constitutional remedies, and where such remedies had been employed after operation, and recurrence had been greatly postponed, the good results should be attributed rather to the radical character of the operation than to the beneficial effect of any specific drug. In a few instances he had known patients with supposed sarcoma to improve marvellously under the administration of iodide of potassium, but it was not impossible that in these cases the tumor had after all been a gumma. Tumors did occasionally disappear

spontaneously, but such instances were extremely rare. As experience had shown that, if recurrence did not take place for three years after an operation, it would only be observed in about two per cent. of the cases, it was fair to make the three-year limit a test of the permanency of the cure. The importance of operating on recurrent growths was shown by reference to a case in which over one hundred cancerous nodules had been removed, and now a considerable time had elapsed since the last recurrence. Every effort should be made to keep these cases under strict surveillance for a long time after extirpation of the growth, in order to be promptly informed of the existence of a recurrence.

COLEY, of New York, read a paper upon the Indications of Non-operative Local Treatment and the Therapeutic Value of Toxins. He presented an analysis of one hundred cases of malignant disease that he had treated with the mixed toxins of erysipelas and the *Bacillus prodigiosus*. In almost every case the diagnosis had been confirmed by adequate microscopical examinations, and most of the cases had been pronounced "inoperable." Of the one hundred cases, sixty-six had been sarcomata, twenty-eight carcinomata, four either sarcoma or carcinoma, and two had first been pronounced sarcoma and afterward proved to be tubercular. In a little over half the sarcoma cases improvement had been shown, particularly in the spindle-cell variety. Out of six patients with melanotic sarcoma, only three had shown even improvement; none had been cured. The results in osteo-sarcoma had been scarcely more satisfactory. All that could be said at present regarding the treatment in carcinomata was that it was very encouraging. To show the permanency of the results in the cases of sarcoma, six patients were presented for examination, some of whom had been cured for three years and over.

Reviews.

TWENTIETH CENTURY PRACTICE AND INTERNATIONAL ENCYCLOPÆDIA OF MODERN MEDICAL SCIENCES. Edited by Thomas L. Stedman, M.D. In twenty volumes. Vol. VI: Diseases of the Respiratory Organs. New York: William Wood & Co., 1896.

We are told by a slip of paper pasted in front of the title-page of this volume that, owing to unforeseen difficulties in the preparation of Vol. V, it has been found necessary to issue Vol. VI out of its regular order, and that Vol. V will be the next one to appear. This also accounts for the lack of sequence in the GAZETTE in the reviews of the various volumes.

The first article in this volume is by Dr. Prosser James, of London; it deals with Diseases of the Nose, in seventy-six pages. We do not find that this article is particularly noteworthy either as to the information which it contains or the manner in which it is written. A better one by far is that by Dr. Jonathan Wright, of Brooklyn, upon Diseases of the Accessory Sinuses of the Nose, which covers thirty pages.

The article upon the Naso-pharynx and Pharynx, by Dr. E. J. Moure, of Bordeaux, is much more exhaustive, as one would naturally expect from the importance of the subject. It covers about 106 pages and is a fair summary of the subject with which it deals, although the illustrations are not as good or as well printed as we could desire. We turn to the article by Dr. Buck, of New York, upon Diseases of the Ear, with considerable interest, because he is so well known to the profession not only as an aurist but also as the editor of encyclopedic works, and we regret to find that under this comprehensive title only about forty-five pages are covered. Perhaps this is all that is necessary, even in so encyclopedic a work, but it recalls to our minds the saying of an old physician that after all otology seemed to consist in the use of a scoop and a powder-blower, and that the results of aural treatment, at least so far as deafness was concerned, were not particularly noteworthy.

The article upon Diseases of the Tonsils is also by Dr. Moure, of Bordeaux, and covers fifty pages. It is a better one than the earlier article which we have mentioned.

By far the best of all these articles dealing with the upper respiratory passages, both from the standpoint of literary ability and from that of scientific scope, is the article by Dr. Bosworth, of New York, upon Diseases of the Larynx. This author utilizes over 150 pages in his usually clear, comprehensive style, so well known to those of the profession who possess his book upon Diseases of the Nose and Throat. Here, again, the illustrations are not as good as they should be in a work possessing so much value and contributed to by such eminent men.

The Diseases of the Trachea and Bronchial Tubes are dealt with by Sir Thomas Grainger Stewart and Dr. George Alexander Gibson, of Edinburgh. Sir Thomas is too well known

as a worker in clinical medicine to require an introduction to American readers, and Dr. Gibson is already well known to many of us by reason of the useful little book on Medical Diagnosis compiled by himself and Dr. Russell. Their article abounds with prescriptions which they have found of value in practice, and the therapeutic portion of their contribution is especially rich, but we note with regret that the editor has not seen to it that information is given concerning the preparations which are official in Great Britain but unofficial in the Pharmacopœia of the United States.

Dr. Winslow Anderson, of San Francisco, concludes the volume with an article on Diseases of the Lungs, excluding croupous pneumonia and tuberculosis.

Taking it all in all, the sixth volume of this Encyclopædia can scarcely be considered the equal of its predecessors in the quality of its contents or in the interest of its articles. There must, however, be some volumes better than others, and we do not wish to give the impression that the present one is not of value. It simply suffers by comparison with its predecessors. In a number of places a little more care in editorial supervision would have been of value. Thus it seems to be the custom, in giving the name of the author on the first page of each article, to also give his place of residence, but in the case of Grainger Stewart and Gibson the place of residence is not indicated.

COLOR-VISION AND COLOR-BLINDNESS. A Practical Manual for Railroad Surgeons. By J. Ellis Jennings, M.D. With illustrations.
Philadelphia: The F. A. Davis Company, publishers, 1896.

This little manual, which opens with a historical sketch of color-blindness, discusses the physiological anatomy of the retina, the physics of light, the theories of color-perception and color-blindness, and the various methods for detecting color-blindness. Holmgren's method, Thomson's adaptation of the colored wools, and Oliver's worsted test, are especially mentioned, and the author has devised a worsted test of his own.

There is one chapter on acquired color-blindness, which comprises a brief description of the disturbances of the color-sense in connection with diseases of the optic nerve and visual centres. There is no mention of those which occur under certain functional conditions, nor of the disturbances of color-sense in neurasthenic and hysteric patients.

The book concludes with the reproduction of the Pennsylvania Railroad Company's instructions for the examination of employés as to vision, color-blindness, and hearing, and a description of Oliver's series of tests for the detection and determination of subnormal color-perception.

Dr. Jennings states very distinctly in his preface that he has not attempted any original work. No doubt his book will be found useful for railroad surgeons. Curiously enough, the two most important works recently published in connection with this subject entirely escape notice, namely, Abney's "Color-Vision" and Mauthner's "Farbenulehre." G. E. DE S.

THE THERAPEUTICS OF INFANCY AND CHILDHOOD. By A. Jacobi, M.D.
Philadelphia: The J. B. Lippincott Co., 1896.

In the preface of this book, which exemplifies, like the rest of the volume, Dr. Jacobi's characteristic style of writing and speaking, the author tells us he has endeavored to afford to his readers a compact book of the therapeutics of infancy and childhood as viewed by him. As a result a considerable portion of the volume is devoted to the subject of diet and hygiene, as increased experience teaches him year by year the great importance of these remedial influences in the treatment of this class of patients. The endeavor throughout the book has been to make the application of the drugs as rational as possible.

Sixteen chapters make up the volume. The first of these deals with the feeding of sick children; the second with the treatment of the new-born; the third considers general therapeutics; the fourth, fifth and sixth chapters deal with constitutional disorders, infectious diseases, and diseases of the digestive organs; and the remaining chapters discuss diseases of the respiratory organs, the organs of circulation, the nervous system, the skin, the ear, the eye, the muscles, and the bones and joints. Not only has Dr. Jacobi kept himself and his book abreast of recent therapeutic advances, but he adds to the information which he collects from other sources concerning them the value of his own personal experience.

DIET IN SICKNESS AND IN HEALTH. By Mrs. Ernest Hart. With an Introduction by Sir Henry Thompson, F.R.C.S., M.D., London.
Philadelphia: W. B. Saunders, 1895.

This is a book dealing with elementary facts in connection with digestion and diet, and evidently intended chiefly for the guidance of the laity or perhaps of trained nurses

in the feeding of the sick. In this respect it well fulfills its mission. It deals with the various methods of dieting, for increasing or decreasing flesh, and for administration in various ailments, and contains a large number of recipes by which nutritive dishes can be served to invalids. Like many other books of its kind, however, it every now and then "flies the track" and dips more deeply into physiology than is necessary. Thus we hardly think it necessary in a book dealing with digestion and diet, and intended for this class of readers, to have two illustrations showing the glomeruli of the kidney and the uriniferous tubules, with the loops of Henle, and the various other portions of the minute anatomy of the kidney. Some of the pictures also are distinctly diagramatic. The book is one which can be cordially recommended as a useful one to be read by those who have the care of the sick, but it is no better than a number of other works on "Diet" which have been recently published. This one is a small octavo of about 220 pages, including the index.

ENCYKLOPAEDIE DER THERAPIE. Herausgegeben von Oscar Liebreich. Erster Band, II Abtheilung.
Verlag von August Hirschwald. Unter den Linden 68, Berlin, 1896.

In the October number of the GAZETTE we took pleasure in introducing this very valuable contribution of German authors to general medical literature to our readers. This second volume extends from "Auge" to a consideration of the various "Cerates." It consists of about 270 pages, large octavo size. We notice in it interesting articles by Liebreich, Ostertag, Grawitz, Munk, Spiegel, and others equally well known. It will be remembered that the object of this encyclopedia is to present reliable information in regard to both important and unimportant therapeutic subjects, whether it deals with drugs or with other remedial measures. It is the most exhaustive compilation of its kind with which we are acquainted, and the second volume fully maintains not only the reputation of the first, but also that of the distinguished editors.

THE MEDICAL DIGEST, 1840–1890. By Richard Neale, M.D. Third edition. And AN APPENDIX TO THE MEDICAL DIGEST, 1891–1895.
London: Ledger, Smith & Co., 1891 and 1895.

To those who work much in medical literature, these small but comprehensive volumes by Dr. Neale are of the greatest possible value, as they afford a means of readily acquiring information upon the principal contributions to medical science during the last fifty years. It is true that one has to learn the peculiar abbreviations and methods necessary for such great condensation before he can resort to the use of the volume with very satisfactory results, but on the other hand these methods are as simple as the ingenuity of Dr. Neale could devise and are very readily understood and employed after the first few references have been attempted. The amount of labor expended in the preparation of this volume in the first place, and in maintaining it at the high standard reached by Dr. Neale, is simply stupendous and deserves ample recompense from the profession. We cordially recommend these volumes as affording a reliable, useful, and economical method of looking up the literature of any subject which may be of interest, and we trust that Neale's Digest will continue to be for many years to come as useful as it has been in the past.

ANNUAL REPORT OF THE SUPERVISING SURGEON-GENERAL OF THE MARINE HOSPITAL SERVICE OF THE UNITED STATES FOR THE FISCAL YEARS 1893 AND 1894. In two volumes.
Washington: Government Printing Office, 1895.

These Reports are the regular annual contributions of the Surgeon-General of the Marine Hospital Service for 1893 and 1894, and contain information concerning the diseases and emergencies which that Department has had to meet during these periods of time. They form interesting and valuable additions to the Government Records, and year by year store up for us a fund of information in regard to disease.

Correspondence.

LONDON LETTER.

BY ST. CLAIR THOMSON, M.D. LOND., F.R.C.S. ENG., M.R.C.P. LOND.

January 23, 1896.

The mountains are in labor, and we are all on the tiptoe of expectation as to whether the result will be a young giant or only the *ridiculus mus*. In a previous letter I recorded that both of the Royal Colleges, that of the Physicians as well as that of the Surgeons, had refused a petition from the School of Medicine for Women to allow their female students to be admitted to the examinations for diplomas. At the former college, although there are three academic grades amongst the profession connected with it — Licentiates, Members, and Fellows,—the government of the institution is decidedly aristocratic, as

only Fellows are allowed any vote or representation in college affairs. It is a repetition of "*L'état c'est moi*," a sentiment of which history in larger political questions has not endorsed the wisdom. But from the decision of the Fellows there was no appeal. In the College of Surgeons there are only two academic grades—Members and Fellows. Up till recently the former have formed a completely unrepresented constituency, while the Fellows have conducted the work of their *alma mater* by means of a limited number nominated by themselves to seats on the Council. Latterly the Members have secured the privilege of being present twice a year at a meeting of the Fellows in order to bring their wants or grievances before those in authority. It was at one of these meetings that the vote was taken to which I have already referred, and which refused the request for the admission of women. Now comes a curious and interesting part in the evolution of this question. The Fellows have since had a meeting, limited to themselves, and have decided by a large majority that women should be admitted to the examinations for the diploma! It is therefore evident that the rejection of their claims at the previous meeting was entirely due to the presence of the Members—the section generally supposed to be inspired with the most democratic and liberal views. It makes onlookers suspicious that their objection was strongly tinctured with trades-unionism, and certainly their demands for representation on the Council could not have been strengthened by this petty exhibition of either prejudice or jealousy. It says all the more, therefore, for the Fellows that at this same meeting they passed a resolution to the effect that Members should have some representation; the details were left for future consideration, as they could not be worked out in such a large gathering. Those who know anything of the history of John Hunter's college will realize what an enormous innovation is conveyed by these two resolutions. The wise beards of only a generation ago must turn in their graves to think that it is proposed to allow Members to be represented and even to sit at the Councils in Lincoln's Inn Fields, or that women may "go in for the Membership" and perhaps become Fellows!

The next promise of progress comes from the University of London. This institution does no teaching whatsoever; it is simply an examining body, its degrees being open to any one from any country and of any creed. They may study anywhere; the University only sets its hall-mark on them. As this mark is of an exceptionally high standard, a large majority of those who start for this distinction never reach the goal. This is a considerable hardship, and when it is recollected that Scotland, Ireland, and latterly the English provincial towns, have their teaching centres where a student can be taught and can generally depend on securing a degree, the anomaly becomes striking. For some time a movement has been on foot to secure for London a university worthy of her size and position, where the average student should not only be well taught but where he might in the ordinary course count on obtaining the coveted M.D. or M.A. The delay in the execution of this scheme has been the difficulty with regard to the present university. Its graduates are somewhat jealous of its high standard, and do not wish to see that standard lowered. Is there room in London for two universities, one to remain simply an examining body with a high qualification, and the new one to be both for teaching and examining—the latter not to be so very exacting? After much palaver we seem to be approaching the solution of the question in favor of the present university being converted into a teaching body with a modified degree. Some way will be discovered for preserving to present graduates the value of their hard-earned degree. Should this become an accomplished fact, the impetus which will be given to teaching in London will be enormous.

Our two large weekly medical journals have been having a little interchange of editorial amenities which has resulted in the public being made acquainted with their respective circulations. The "issue" of the *British Medical Journal* is 19,500, while the *Lancet* is said to print 10,000 copies weekly. The latter maintains that its "position is now exactly what it has ever been—the highest," and no doubt it is right in affirming that "our circulation is the largest purely medical circulation in the world where the subscribers expect to get nothing whatever in return for their money save their paper." The *British Medical Journal* is of course the journal of an Association and as such is bound to contain a good deal of business notices and reports of unimportant branch meetings. It is, however, remarkable the amount of both news and medical information it contains; the latter must be sought for, especially when it is recollected how unequal must be the produc-

tions of the various members, of whom each one has a semi-right to have his effusions noticed.

This year the annual meeting of the British Medical Association will be held at Carlisle on the 28th, 29th, 30th, and 31st of July. The selection of this Border burgh will give an added interest to the meeting for readers of Walter Scott and of our modern romancers like Stevenson, Crockett, and Ian Maclaren. The proximity to the English Lakes and the Isle of Man will afford many excursions of interest, while the short distance from Liverpool will be convenient to our colleagues from the United States.

Some question having been asked as to the composition of the ointment referred to in your letter from the International Congress of Otology, and recommended by Dr. Daly (Pittsburgh) for chronic eczema of the external ear, I find that it is thus given by Dr. Dundas Grant in the *Journal of Laryngology:*

℞ Hydrarg. ammon. chlor.,
Hydrarg. subchlor., of each gr. j;
Cold cream, ʒ j.

At the same meeting Dr. Adolf Bronner recommended local massage applied with a thick silver probe, tipped with cotton and smeared with the following:

℞ Hydrarg. oxid. flav., gr. x;
Vaselin, ʒ j.

With regard to the operative treatment of cleft palate, some very important points have been emphasized in a lecture given by Mr. Edmund Owen. In many instances, even in hare-lip operations, should suppuration set in, the granulating surfaces may be brought together and a very satisfactory result obtained by secondary union, but it is of exceptional importance to secure primary union in treating cleft palate. The following useful details are therefore well worth remembering: As soon as possible after the operation, the very next day as a rule, the child should be taken into a garden and spend the entire day out of doors. Hence it is well to arrange for operating in the spring or summer. It is to this fresh-air method that Mr. Owen attributes the fact that he gets better results in private practice than in hospitals. Additional points are: attention to carious teeth and to enlarged tonsils and adenoids, if present; the use of silver-wire sutures, not cut too neatly but so as to leave some sharp projections which will prevent the child from thrusting the tip of its tongue into the line of sutures; the importance of not alarming it by insisting too strongly on feeding through the nose or by pressing the use of sprays or mouth-washes; and the preference of water and beef-jelly to milky foods. As to the proper age for operating, the author prefers the first six months for a cleft of the soft palate only, and the second year when both the soft and hard palates are affected.

The treatment of diseases of the heart by the "Schott method"—as the plan of saline baths and resisted exercises is called—appears to be establishing itself. It is now being carried out at Buxton, Llangammarch, Leamington, and other health resorts, as well as in London with artificially prepared baths. These latter can be made by the action of hydrochloric acid on bicarbonate of soda. As a state of chemical purity is not required by the circumstances of the case, the articles of commerce are sufficient for the purpose. Dr. Bezley Thorne gives a receipt for preparing these artificial baths in three strengths according to the degree of effervescence:

Mild: ¼ lb. $NaHCO_3$ to ¾ lb. HCl (twenty-five per cent.).

Medium: 1 lb. $NaHCO_3$ to 1½ lbs. HCl.

Strong (Sprudel strength): 2 lbs. $NaHCO_3$ to 3 lbs. HCl.

The bicarbonate of soda is dissolved in the bath together with a one- to three-per-cent. proportion of chloride of sodium, or crystallized Nauheim bath-salt or sea-salt. If it is desired that the effervescence should take place slowly, the bottle containing the acid is laid at the bottom of the bath, and, the stopper having been withdrawn, it is moved about from time to time. The bath will be ready for use in two or three hours. For the more rapid production of effervescence, the stopper of the bottle containing the acid is loosened but retained in position, the bottle having been inverted and lowered until the mouth is just below the surface of the water; the stopper is then withdrawn, and the bottle is moved about so as to diffuse a layer of acid as uniformly as possible over the surface of the bath. By this means the bath will be prepared in about five minutes.

The resisted exercises can be easily learned from a perusal of Dr. Thorne's monograph, where they are well described and illustrated. (It is published by Messrs. Churchill.)

In mentioning health resorts I am reminded that a handsome volume on "The Climate and Baths of Great Britain" has just been published by the committee nominated by the Medico-Chirurgical Society to report on the subject. It can be obtained from Messrs. Macmillan, New York.

Some cases have been recorded lately tending to show that in permanganate of potash we have a safe and reliable antidote for opium and its chief alkaloid, morphine. In one instance a man swallowed sixteen grains of sulphate of morphine; he was given in all three doses of permanganate solution (five grains in each), and made a rapid recovery. Morphine is well known to be largely excreted by the mucous membrane of the stomach, and the administration of the permanganate unquestionably accelerates its elimination by that organ, the alkaloid being rapidly taken up and oxidized by the permanganate.

At a meeting of the Pathological Society it was recently pointed out that when a goitre has been removed subsequent operations have sometimes to be undertaken for what are supposed to be hypertrophies of accessory thyroids. Most of the speakers did not agree with this explanation of these latter manifestations, and suggested that in opening the primary cystic tumor the wound had become infected, and that from the seeds so implanted these other formations had ensued, the disease being locally but not generally infective. An analogous result takes place when papilliferous cysts of the ovary are ruptured and secondary formations take place on the peritoneum.

To any who are inclined to neglect the mental and nervous element in disease I would recommend the study of an address by Dr. Clouston, the Superintendent of the large Morningside Asylum at Edinburgh. He therein shows "that the brain cortex, and especially the mental cortex, has such a position in the economy that it has to be reckoned with more or less as a factor for good or evil in all diseases of every organ, in all operations, and in all injuries. . . . . We talk and laugh and weep, we blush and shiver, we hunger and sweat, we digest and defecate, all through the brain cortex. . . . . It seems as if certain persons who were predisposed to certain diseases have, as their great protective and prophylactic against them, a sound and well-working mind and brain cortex. When well in mind, they are sound in body. When disturbed in mind, they fall victims to their diathesis."

A certain amount of interest and discussion is always raised by reference to the fortunes left by medical men. Amongst those who have died during the past year it appears that Sir William Savory, Surgeon-extraordinary to the Queen, and ex-president of the Royal College of Surgeons, left the goodly sum of £93,190. On the other hand, Dr. J. S. Bristowe, who had a much higher scientific reputation, left only £15,734. The average of the estates left by sixty-seven prominent medical men during the last few years is found to be £50,614, or less than half of that of forty-four lawyers.

February 21, 1896.

It is needless to begin by saying that the question of the hour is the "New Photography," all the various other "new" subjects being temporarily shelved. The Roentgen rays monopolize as much space in our medical journals as they occupy conversation at dinner-tables, while the now well known photograph of the bones of a living hand appears in every magazine and every shop-window. I do not know that any fresh work on the subject has been done here, but the whole matter is thoroughly gone into and new photos given in the March number of *The Practitioner*.

While this "boom" is decidedly in the ascendant, another threatens to have already reached its apogee. I recently referred to the numerous encouraging observations emanating from various sources on the subject of the "Nauheim Treatment of Heart Disease." A decidedly adverse criticism and a salutary note of warning comes from Dr. Herschell in an article in the *Lancet*. He begins by referring to the diagrams with which most of the articles I have quoted are illustrated. These purport to be absolute reproductions, to scale, of the different positions assumed by the upper edge of the cardiac dullness from day to day under the treatment. Many readers have doubtless shared Dr. Herschell's feelings with regard to these diagrams; the first feeling being one of admiration for the skill of the percussor, the next being one of absolute skepticism—not that the *bona fides* of the makers of these diagrams is for one moment impugned, but because they have undoubtedly been unconsciously deceiving themselves. Some cases are recorded to show the uselessness of the baths in valvular heart disease, and it is pointed out that the "movements" imply such possibilities of harm that they require to be most judiciously prescribed. The author limits the Nauheim cure to two classes: the first is formed of cases of functional disturbance for which the treatment is admirably suited, as the patient is made to go through a definite treatment which is

mysteriously modified by the physician according to certain supposed indications in his particular case; the second class comprises the individuals of middle age who eat too much, take too little exercise, and suffer from palpitation and shortness of breath. These cases will be much benefited by any form of gentle exercise, and the movements given by Dr. Schott are perhaps as good as any other to begin with.

Of other recent "booms" the diphtheria antitoxin appears to hold its ground. A valuable observation has been recorded by Dr. Hewlett showing that the specific organism of diphtheria was found in the throat of a patient twenty-three weeks after convalescence; moreover, the virulence of the bacillus was maintained to the end, for a culture of it sufficed to kill a guinea-pig in thirty-six hours. Mr. Butlin has been somewhat adversely criticised for using his position as president of the Pathological Society to question the importance of these virulent bacilli after so long a period. According to Mr. Butlin, there are possibly hundreds or even thousands of persons who harbor similar bacilli without danger to the common weal. This is the *ipse dixit* which is criticised as unwarrantable unless bacteriology is a scientific fad and a delusion.

A cure has been recorded of a case of chronic tetanus treated by Tizzoni's antitoxin. It is unfortunate for the completeness of the record, that there was no bacteriological confirmation of the diagnosis.

To abort acute quinsy (the form which commences on one side of the fauces,—peritonsillar inflammation tending to suppuration) it is recommended to paint the affected tonsil freely with a strong solution of hydrochlorate of cocaine; in most cases this will cut short the attack, and suppuration will not occur. Another writer points out that an equally satisfactory result may be obtained by the administration of an emetic, a method which is thus mentioned in the classic pages of Sir Thomas Watson: "When you catch the disorder at its very onset you may sometimes succeed in cutting it short by an emetic."

I lately came across an attempt to oust the obstetric binder from its apparently permanent position of dignity and comfort. Either alone, or embracing in its folds the family Bible, it has been so long an institution in the chambers sacred to Mrs. Gamp that it will take many an attack to dislodge it from its place in the ritual of the lying-in room. It is pointed out that it only causes congestion, cripples the action of the abdominal muscles, leads to retro-position of the uterus, prevents that organ from being massaged by the play of the abdominal muscles, interferes with the action of the bladder and bowels, makes the patient uncomfortable, and is apt to get soiled and so be a source of septic infection! If dethroned, what will become of the accoucheurs who have been said to owe their reputation in great part to the skill with which they put the binder on?

Yet another family institution is threatened! Mr. Lennox Browne has suggested the abolition of the gargle! As used in the ordinary way, it fails to bring fluids into contact with the posterior wall of the pharynx, and serves almost entirely only as a mouth-wash. The only plan of using it which can have any effect on the parts intended to be reached is that of Von Troelstch. In this a teaspoonful of the liquid is taken in the mouth, the head is thrown back, and while the nose is closed with the fingers the mouth is held open and the movements of swallowing are made without allowing the fluid to pass down the throat. However, the gargle can be very well replaced entirely by sprays, paints, and medicated pastilles.

To the presence of enlarged veins at the base of the tongue—a condition which has been dignified by the name of "lingual varix"—much throat and laryngeal trouble has been attributed by some authors. Dr. Herbert Tilley has entered a plea against this view of things, and is even led to ask: "Does such a condition (*i. e.*, of varicose veins in the region of the lingual tonsil) exist, and, if so, with what frequency?" Naturally he condemns the treatment which, by those who believe in the reality of their pathological postulate, is only too readily adopted, viz., that of cauterizing the veins at the root of the tongue. A sufficient number of cases are on record in which the cautery treatment was followed by acute inflammation of the base of the tongue, so that if the benefit from this method is doubtful the danger is very certain.

As the subject of the dangers of cocaine has recently attracted attention, some practical remarks by Dr. de Havilland Hall are well worth noting. He combines resorcin with cocaine as follows:

℞ Cocaine, 20 Gm.;
Resorcin, 10 Gm.;
Water, 70 Gm.

The addition of resorcin diminishes the toxic effects of cocaine, while it increases the anesthetic effect of the latter and also pre-

vents it from crystallizing out. The antiseptic properties of the resorcin in the solution are also of value. Again, Dr. Hall entirely disapproves of the spray for applying cocaine to the nose. Nearly all the cases he has seen or heard of in which unpleasant effects have followed the use of cocaine have occurred when a spray has been employed. He uses the solution on a cotton applicator, and does not use more than is absolutely necessary. Finally, as antidotes he always keeps at hand some capsules of nitrite of amyl and some ammonia. If the patient becomes pale, giddy, or faint, he is given a drachm of the aromatic spirits of ammonia in two ounces of water, and is directed to sip it slowly. This usually suffices to remove the temporary discomfort; if not, the patient lies down for a few minutes. He has never had occasion to make use of the capsules of nitrite of amyl, and, since employing the double solution of resorcin and cocaine, even the slight toxic symptoms have been of rare occurrence.

I have already written that the annual meeting of the British Medical Association will be held in the old Border city of Carlisle. It is now announced that the number of Sections—which has been gradually increasing—is to be limited to nine. "For this relief, much thanks;" for indeed the subjects of our art had been divided and subdivided until at last the attendance at several Sections had diminished to the officials and a handful of wandering visitors. I note that amongst the absentee Sections this year are those of Therapeutics, Dermatology, Laryngology, and Otology. The absence of the Section of Dermatology is of course more than counterbalanced by the fact that the International Congress on that subject will be held in London early in August, under the presidency of Mr. Jonathan Hutchinson.

Still another medical society! The British Balneological Association has been founded, *inter alia*, to impress on the medical profession and the public that in the United Kingdom are to be found many spas which possess just as much therapeutic value as those located abroad. Unfortunately for the development of British spas, a *Kurgast* is made well not by water alone, but to a very large extent by the brightness, the joyousness, and the many innocent methods of diversion and recreation which are to be found in any Continental health resort, and which are so grimly absent from the "pleasure resorts" (save the mark!) of these Puritanical islands. Until means have been provided, other than those of getting drunk at fixed hours, for the public to enjoy itself harmlessly in the open air, and until the amusement and happiness of the people is looked upon as a civic duty, the Balneological Association will have an up-hill fight.

The employment of bone-marrow in pernicious anemia has been shown by some careful observations of Dr. G. B. Hunt to be of very doubtful benefit. He points out that it is difficult to explain in what way any good effects could be produced by its administration. Two suggestions might be made, corresponding to the two theories that the changes in the bone-marrow found post-mortem are either the result or the cause of the disease. If the first view is taken, that the change in the marrow is due to its over-action in its endeavor to manufacture new red corpuscles, it might be supposed that the marrow which is administered might either help to form new corpuscles or else contain some substance which would act as a stimulant to the blood-forming organs. It would, however, be very difficult to believe that the marrow of an animal taken into the stomach and digested could form new corpuscles, and, as the only tissue which is supposed to form new red corpuscles in the adult—*i. e.*, the red marrow—is already greatly increased, any substance greatly stimulating this tissue to increased action would be useless. If the other view is taken, that the changes in the bone marrow are in some way the cause of the disease, it might be thought that the administration of marrow extract might supply some deficiency, in the same way as the administration of thyroid-gland extract supplies some deficiency in myxedema. But it is contrary to the general opinion to suppose that the changes in the marrow are the cause of the disease in the same way that the atrophy of the thyroid gland is the supposed cause of the myxedema. Supposing it is the cause, the red marrow in these cases is hypertrophied, not atrophied, so there is no deficiency which can be compensated by giving the extract.

Much attention has been given lately both in our journals and in the debates of our medical societies to the subject of malaria. With regard to the use of quinine as a prophylactic, one writer comes to the conclusion that the administration of even small doses of the drug over a certain period acts injuriously on the red corpuscles, but clinical experience shows that in most cases the injurious effect of quinine, not continued over

too long a time, may be practically ignored. It seems quite certain that most people can take five grains of quinine daily over a very considerable period without any appreciable injurious effect, and for those who stay in malaria-stricken districts and where the malarial parasite is virulent, this dose might be increased. The prophylactic dose should be begun two days before the person is exposed to the action of malaria, and should be continued for ten days after he leaves the district. The solution of the powder is preferred to other forms, and therefore capsules, pills and the various forms of compressed drugs should be eschewed.

Nocturnal incontinence of urine is apt to prove so intractable that the following method of employing electricity is well worth noting: A soft No. 10 rubber catheter is passed into the bladder, and connected by an india-rubber tube to an irrigating tin or other vessel containing a measured quantity of boric-acid lotion. The irrigating tin, insulated by suspension on a piece of drainage-tube, is now raised from one to two feet, and the bladder injected under slight pressure, the amount of fluid injected being carefully measured. On the slightest complaint of pain the tin is at once lowered. As soon as the bladder has received as much fluid as it can comfortably retain, the positive electrode of a constant-current battery is applied over the lumbar spine, and the negative placed in the fluid in the irrigating tin, thus completing the circuit through the column of fluid in the rubber tubes and that distending the bladder. A weak constant current is now allowed to pass for some ten minutes. This is repeated at first every evening for a fortnight, and then at longer intervals. By this method a current of electricity, after passing from the neighborhood of the lumbar cord through the vesical nerves, may be evenly distributed over the walls of the distended bladder.

The above treatment was continued for some months, the applications being repeated once a month, in the case of a woman aged twenty-two, who had suffered since childhood. Not only had all the usual drugs been tried in vain, but also electricity applied in the ordinary method had proved of no avail. At the time the report was made she had remained well for four months.

The fact that the knife is not only a palliative for cancer, but in a majority of cases a cure, is shown by the lectures recently given by Mr. Watson Cheyne. He takes as "cured" any case remaining free of recurrence after three years, and for cancer of the breast his statistics show that these amount to fifty-seven per cent. A very few years ago the proportion was given as little over ten per cent. This remarkable improvement is due to many causes: the realization of the idea that cancer is in the first instance a distinctly local disease; the study of the anatomy of the mamma and of its lymphatics; and the freedom with which—thanks to Lister's teaching—the entire breast can be removed along with a large amount of skin and the contents of the axilla.

On this side of the water we are gradually getting to know the value of certain American M.D.'s The Secretary of the Medical Defense Union has been pointing out in the *Times* that the "University of Philadelphia" *non est.* He states that this so-called university had its charter revoked in 1879 for selling its diplomas to persons who had not followed the prescribed course of studies. The public would be protected and the status of genuine American graduates enhanced if these bogus titles were more systematically exposed.

PARIS.

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Preparation of acetate of amyl, or analysis of some compound containing two metals and one acid, or a quantitative analysis. In natural history the student was made to dissect the nervous system of a leech, or do work of a similar nature, and to mount and color botanical histological preparations; to name the families of several plants, no assistance by book being allowed; and finally to determine a certain number of plants with the aid of a Flora.

If the same system be applied, as seems probable, with equal efficacy to the remainder of the medical course in Paris, there is no doubt that the laboratory work in this country will be much improved.

In a discussion which took place recently at the Société Médicale des Hôpitaux, on the accidents to be attributed to the injection of anti-diphtheritic serum, Dr. Chantemesse gave an account of a method he had recently tried with the object of doing away with the inconveniences due to the hypodermic use of the various serums. Dr. Chantemesse practices sero-therapy by means of intestinal injections, and has already a series of twenty cases in which he has been able to convince himself that the absorption of the serum by the mucous membrane of the intestine was attended by no inconveniences. The rectum is first emptied by an ordinary enema, and the serum is then injected by means of a syringe and a medium-sized rubber sound. It does not seem to Dr. Chantemesse that the dose required by this method is larger than when it is administered hypodermically. Three of the cases cited above were diphtheritic, and in these the anti-diphtheritic serum seemed to act with as much efficacy as when a hypodermic injection is made. Marmorek's serum was given in serious cases of erysipelas, and no trouble was experienced as a result of comparatively large doses.

Another method of applying the serum, Dr. Chantemesse finds, diminishes considerably the pain, redness, and tumefaction in erysipelas; it consists in a local application of the serum diluted with five times its weight of lanolin.

Scarlet fever has been treated in the wards of Dr. Josias, of Paris, by the use of Marmorek's anti-streptococcic serum. Ninety-six children were thus treated. The object was to prevent or remove any effects due to the association of the streptococcus with the undiscovered micro-organism which is the cause of the disease. Dr. Marmorek employed doses of ten cubic centimeters each, from ten to twenty cubic centimeters being injected during an ordinary case, and even eighty cubic centimeters being attained in serious cases. Under the influence of the treatment the glandular swellings of the neck, as well as the albuminuria and otorrhea, rapidly disappeared, while the pseudo-membranes of the throat and the delirium were much diminished in cases where they were due to the streptococcus. It is worthy of remark in this connection that scarlet fever is looked upon by some physicians here as a special form of streptococcus infection, the question being whether the streptococcus of erysipelas and the streptococcus of scarlet fever are exactly identical.

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In some cases enormous doses of liquid have been injected into the veins, Dr. Lejars having attained the amount of twenty-six liters in five days. If during an operation symptoms of collapse manifest themselves, Dr. Lejars gives two or three injections of 100 Cc. each into the subcutaneous tissue of the thigh. The solution usually adopted is Hayem's artificial serum, namely:

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French or naturalized, and to have passed a special examination on subjects referring to sanitary laws and hygiene. Boats provided with a surgeon so appointed, and with the necessary apparatus for disinfection of contaminated objects, will be allowed certain advantages, one of the most important being a reduction in some of the dues payable by them.

A. P. TURNER, M.D. (Paris).

TREATMENT OF PERSISTENT VOMITING OF PREGNANCY.

To the Editors of the THERAPEUTIC GAZETTE:

SIRS:—In December I was called to see a young married woman, twenty-two years old, who was suffering from severe nausea and vomiting. Upon examination I found the uterus hard and about twice its normal size. Patient had missed the last period. I diagnosed pregnancy in the second month, and commenced treatment for the nausea and vomiting. After trying almost everything recommended, for about twenty days, I found that the patient was growing very weak—was unable to move around in bed; pulse was becoming weak and rapid; vomiting occurred every ten or fifteen minutes, and the vomit contained a great deal of mucus, bile, and some blood. I then decided to dilate the cervix with my index finger, which I did, introducing it only to about the first joint. This was about 3 o'clock in the afternoon. Three hours later I returned and found she was resting better. That night she slept well. The next day the nausea and vomiting had entirely ceased, and have not returned.

Yours truly,

CHARLES D. HARRINGTON, M.D.

SLIGO, MISSOURI.

Notes and Queries.

VIVISECTION.

The question of the prohibition of vivisection—which, we know, excites certain people in our own country—has been submitted to the test of popular opinion in a country which governs itself upon communistic principles, and which, therefore, might be expected to give expression to the popular feeling on this subject. A measure for the total prohibition of vivisection was submitted *ad referendum* to the population of the Canton of Schwyz, in Switzerland, with the result that 40,000 votes were against such prohibition, and only 17,000 for it, while a proposal to allow the procedure for scientific purposes was carried by an equally conclusive majority. Apropos of this decision it may be noted that a company has recently been formed in Paris for the purpose of popularizing the Pasteur inoculations. It proposes to erect a hospital in which the inoculation treatment will be made a specialty, and the capital necessary has been subscribed on the moment. It thus appears that all the braying of the anti-vivisection organizations in this country and elsewhere has been attended with no more substantial result than noise, if, indeed, it has not the effect of disgusting the public with such a melancholy exhibition.—*Medical Press and Circular*, Jan. 8, 1896.

WHAT CONSTITUTES A NORMAL ANTITOXIC UNIT?

This is a query often addressed to us by correspondents who confess themselves entirely at sea as to the potency of diphtheria antitoxin. In the following note we shall seek to make perfectly clear the meaning of the normal unit, but no lucidity of explanation can do away with the necessity for a little memorizing.

The first thing to remember is the fact that of a standard toxin or diphtheria virus, 0.1 Cc. is a dose fatal to a guinea-pig of average size.

A normal serum is one possessing such potency that 0.1 Cc. will completely counteract the effects of 1 Cc. toxin; in other words, 0.1 Cc. normal serum will save ten guinea-pigs from the fatal dose.

One cubic centimeter of normal serum will counteract 100 fatal doses, or 10 Cc. of toxin, and this constitutes a normal unit.

One cubic centimeter of our Antitoxin No. 1, possessing a potency of 60 units, will therefore counteract 600 Cc. of standard virus or toxin.

One cubic centimeter of our Antitoxin No. 2 (100 units) will counteract 1000 Cc. toxin.

One cubic centimeter of our Antitoxin No. 3 (150 units) will counteract 1500 Cc. toxin.

For greater clearness, we repeat the foregoing in the form of equations:

0.1 Cc. toxin = fatal dose to medium-sized guinea-pig.
0.1 Cc. normal serum = 1 Cc. toxin, or 10 fatal doses.
1.0 Cc. normal serum = 10 Cc. toxin, or 100 fatal doses, or one normal unit.

The dose (10 Cc.) of our Antitoxins, Nos. 1, 2, and 3, possesses a potency of 600, 1000, and 1500 units, respectively.—PARKE, DAVIS & CO., in *Pharmacal Notes.*

—THE—

Therapeutic Gazette.

WHOLE SERIES, VOL. XX. DETROIT, MICH., APRIL 15, 1896. THIRD SERIES, VOL. XII. NO. 4.

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*SPRAINS AND THEIR TREATMENT.**

BY J. C. BIDDLE, M.D.,
Surgeon to the State Hospital for Injured Persons of the Anthracite Coal Region of Pennsylvania, Fountain Springs, Pa.

This is a subject of which all practitioners should have a thorough knowledge. We too often slight the lesser and more common forms of traumatism, of which sprains constitute so large a proportion. In my opinion it is almost impossible to have a fracture, dislocation, or contusion, without a sprain of the muscles, tendons, fasciæ, blood-vessels, nerves, or ligaments, except in cases of the most direct violence. This is particularly true in such fractures as Barton's and Pott's.

To make a convenient division of the subject, I will classify sprains as simple and severe.

By simple sprains I mean those sprains where only the muscles and ligaments are stretched to the extent of slightly tearing their fibres, and where only a few filaments of nerves and small blood-vessels are torn. The patient will walk to your office or to the dispensary, even if the ankle-joint be the seat of the sprain, complaining of slight pain and some difficulty in walking. There will be little if any swelling; superficial pain—and

*A paper read before the Philadelphia Chapter of the Jefferson Medical College Alumni Association.

this only when the part is pressed upon or when the joint is rotated, flexed, or extended to the extreme limit. In simple sprains the pain gradually subsides, the swelling passes away in a few days, and the muscles and ligaments regain their accustomed functions.

In severe sprains the muscles, fasciæ, ligaments, nerves, blood-vessels and synovial membranes surrounding the joint are torn, producing impairment if not total loss of motion, with intense pain over the part affected. The patient will feel faint and weak, and express himself as having received a severe shock to his nervous system. In a few hours there will be added heat and swelling, and later discoloration due to the extravasation of blood into the tissue. These symptoms will be present in all sprains, but it is almost impossible for two sprains to be exactly alike. The joints differ from each other in structure, formation, and action; their anatomy is about as widely different as their mode and extent of motion.

When the ankle, knee, hip, wrist, elbow or shoulder-joint receives a severe sprain and presents the symptoms just described, the patient should be put under an anesthetic and the greatest care taken to make a positive and complete diagnosis, not only as to the kind of injury, but as to the extent and degree. I am satisfied that more than half the crippled limbs, anchylosed, stiffened or painful joints which come under the notice of surgeons daily are due to the fact that a proper diagnosis was not made.

How can I tell you in this paper how to differentiate between a fracture near or involving the joint, and a severe sprain, especially should the sprain be of the ligaments to which is attached a small portion of cartilage or of bone, and known in the books as sprain-fractures? To the ordinary medical man I fear I will not be able to do so, though with the patient in view I might be able to show that either one or both were present. To make a diagnosis in these cases, a great deal of tactile sense and years of practical experience must be had, besides a thorough knowledge of the anatomy of the particular joint affected. The touch must be educated so as to be able to distinguish between the rough grating crepitus given when two broken ends of bone rub against each other, as in a fracture, and the sensation when the softer cartilage or ligament glides about under the manipulation, or when the indistinct crepitation produced by the deposit of plastic matter is felt. You must know the amount of natural mobility and usual deformity. You must know the natural position that one bone holds to another; but here an undue amount of swelling may bury the prominences of the bones, and their relative positions be thus hidden from view; or if the synovial membrane or an artery be torn in the sprain, hemorrhage will occur and the synovial sac be thus distended; or the hemorrhage may occur under the skin and between the muscles. At the knee-, elbow- and wrist-joints, where bursæ are common and distended, any or all these signs may be present and may totally obliterate all the anatomical points so necessary in making a correct diagnosis. The diagnosis of a sprain is, therefore, difficult. This is quite contrary to so eminent an authority as Moullin, who says: "It is not often that there is much difficulty in the diagnosis of a sprain, particularly if the joint is a superficial one like the ankle or the knee. The nature of the accident, the sudden onset and peculiar character of the pain, the rapid swelling of the part, and the helplessness of the limb, are in general quite sufficient to convince the patient of the misfortune that has befallen him." He evidently is of the opinion that the patient rather than the doctor ought to know. Continuing he says: "But as, short of a dislocation, nearly every kind of injury that can involve either a joint or the tissues in its immediate neighborhood is called a sprain, this is scarcely sufficiently definite. In no other kind of accident do precision and exactness of diagnosis repay more thoroughly the pain and trouble of careful examination; nowhere is it more essential to form a definite conclusion as early as possible, not only of the kind of hurt sustained, but of its extent and degree."

Now let us refer again to the points of diagnosis. From what I have just said and from my personal observation and experience I must conclude that the rough grating sensation, the pain and the preternatural mobility (deformity in some cases) will be sufficient to decide that it is a fracture and not a sprain. The character of the pain (sometimes likened to the sting of a wasp), the exact point, the tenderness at the point of insertion of the muscles or ligaments, the history given by the patient, the smoother sensation of crepitus of either ligament, cartilage, or fibrous capsule, combined with the experience derived from the manipulation of many sprains and fractures, will enable you to say beyond a reasonable doubt that it is a sprain, even though considerable swelling exists.

Thus far I have said nothing concerning sprains of the vertebral column. If it is difficult to make a diagnosis in sprains of the ankle, knee, wrist, elbow, and shoulder, it is infinitely more so in severe sprains of the vertebral column. The reason is obvious: the structures concerned are exceedingly complicated and so thickly covered with muscles, especially in the lower dorsal and lumbar region, that it is next to impossible to elicit any of the usual symptoms. There are so many separate joints—ninety-nine, I think I was told by Pancoast in the upper lecture-room—in the vertebral column, and each has a separate synovial sac and is susceptible of more or less motion and therefore subject to sprains. In and around all these joints we have the lenticular discs of intervertebral substance, the anterior and posterior common ligaments, the ligamenta sub-flava, the capsular ligaments, synovial membranes, the interspinous and supra-spinous and inter-transverse ligaments, the meningo-rachidian veins and arteries of all sizes, nerves, and last but not least the spinal cord and its membranes; and over all these, numerous layers of muscles and fasciæ,—all subject to sprains.

Holmes says the vertebral column serves several distinct offices in the skeleton, some of which appear at first incompatible with others. "It is a pillar for sustaining weight, a girder for connecting distant members, an elastic jointed mechanism for motion, a supporter of the ribs for breathing, and a tube for containing the most vitally important organ next to the brain, the cord." I mention these muscles, joints, ligaments, and use of the vertebral column, because of the almost universal habit physicians have of overlooking and ignoring these structures even in simple sprains, and placing the accident as one of injury to the cord. Especially is this true in railway accidents. The symptoms of simple sprains of the muscles and ligaments of the vertebral column differ only in degree from those in other joints. The tenderness under pressure is usually not restricted to one or two of the spines. The spines will be in a straight line and on a proper level. Some subcutaneous ecchymosis may attend the swelling. The patient will hold himself in a position least attended by motion of the parts.

In severe sprains the symptoms will be augmented. There will be the same inflexible condition and great increase of pain, complicated with hematuria for several days. Especially will these symptoms be increased if the cord, its membranes, a spinal nerve, or any portion of the intervertebral substance be involved. If the cord is involved, the symptoms cannot easily be mistaken, even by the novice. The degree of shock, the insensibility even when there is no brain lesion, the paralysis, the crawling, creeping, tingling sensations down the limbs even to the toes, are noteworthy. The hyperesthesia of the skin usually is most pronounced just above the point of injury, with tenderness and increased sensibility all the way down the vertebral column. The patient will tell you that he felt "something give way" or "a crick" in his back, which is followed by the symptoms varying in degree as above given. In making a diagnosis between severe sprain of the vertebral column and fracture or partial or complete dislocation, I think the symptoms of injury to the cord, particularly paralysis, can be relied upon.

In many of the one hundred and ten cases of fractures and dislocations of the vertebral column which I reported last year in a paper read before the Lehigh Valley Medical Association I found symptoms of sprains at quite a distance from the fracture, evidences of which were plainly visible in the cases on whom the operation of laminectomy was performed. Pain on pressure in a fracture or dislocation is limited to one or two of the spinous processes, and with the deformity will assist you in coming to a definite conclusion; besides these, the posture the patient will assume in bed, and the further fact that he will in a few days, though with difficulty and the exhibition of much fatigue and pain, make an effort to sit up. If he succeeds, and you find by tracing the spines that they are in their normal position, you may confidently conclude that it is a sprain.

Dr. Gallagher, my first assistant, has very kindly tabulated from the register the sprains unassociated with fractures or dislocations, amounting to 1462. These were divided as follows: 484 of the vertebral column; 227 of the ankle; 217 of the knee, 138 of which complicated the synovial sac; 152 of the wrist; 53 of the elbow; 87 of the shoulder; 44 of the muscles of the abdomen; 46 of the muscles of the thigh, leg, and arm; 49 of the muscles of the chest; 7 of the muscles of the neck; 5 of the hip-joint; 88 miscellaneous, which includes sprains of the phalanges and tendons; and 3 of the ligamentum patella.

In the 484 cases of sprain of the vertebral column, sixty per cent. were in the lower dor-

sal and lumbar region, twenty-five per cent. in the atlo-axial joint, and fifteen per cent. in the lower cervical and upper dorsal region.

In the treatment of sprains of the vertebral column, great care and judgment must be exercised. When the symptoms as before stated are local, when there is no paralysis, sensation normal excepting at the point of injury, when the kidneys, bladder and rectum are unaffected, you will know that the cord has escaped, but the possibility of one of the following forms of more abiding and graver troubles must be borne in mind: extravasation of blood into the vertebral canal or in the substance of the cord; inflammation in the fibrous structures near to and extending inward to the meninges or cord, and so leading to compression by inflammatory products or to chronic changes in the cord or meninges; suppurative synovitis or vertebral disease. These can be best avoided by enjoining absolute rest in bed on a hard mattress for a period of from four to six weeks. If the lesion is in the cervical region, large sand-bags should be applied one on each side of the head and neck, with a low pillow so as to keep the parts quiet. Internally I usually administer ten grains of Dover's powder every three or four hours to allay pain and prevent muscular spasm, and from twenty to thirty drops of the fluid extract of ergot four times daily to contract the vessels. In the chronic cases, rest and massage with chloral, and compound soap liniment externally once a day, and small increasing doses of the iodide of potassium, will aid absorption.

In the treatment of sprains in the joints of the extremities I apply oakum, fitting it nicely around the joint so as to make compression on the synovial sac, being careful to avoid making undue pressure on the prominences of the bones in the application of the bandage. I then put the joint at rest by well padded splints, thus securing perfect rest with compression so as to prevent swelling, renewing the bandage twice a day if necessary, giving the patient either ten grains of Dover's powder or one-fourth grain morphine hypodermatically two or three times a day to allay pain and spasm. I sometimes use a Martin bandage over the oakum, should much swelling exist. As to the time the joint should be kept at rest, much difference of opinion exists. I treat each case as in my judgment it demands. Two things must be remembered, and I always try to impress the patient with these facts: that if the joint remain too long unused, there is the possibility—if the synovial sac be torn, almost the certainty—of its becoming anchylosed, so that he may never regain full motion; but if the joint be used too soon, the original injury is maintained, synovitis will occur, and the joint be destroyed. But I am not afraid of inflammation, and will not allow it to overshadow the principle that the function of a joint is motion. I therefore, unless there are other causes, make gentle yet firm passive motion in the direction of flexion and extension on the third and fourth days. I am careful to avoid lateral movements in the ankle- and knee-joints. If the case come to me after some weeks, and there is pain, tenderness, rigidity of the muscles, and stiffness—in other words, a chronic sprain—I anesthetize the patient, break up the adhesions by forcible manipulation, and treat almost as in a recent injury. In these cases massage is an invaluable remedy if properly used, as it restores the skin and muscles to a healthy condition. Under this treatment surprising results have often been obtained.

In the treatment of sprain of the knee-joint accompanied with rupture or effusion into the synovial sac, the same general treatment is employed. Should the effusion which is floating the patella high above the condyles of the femur refuse to respond in a week or ten days, I remove it with the trocar or aspirator and then make firm compression as before.

In those cases of sprain which are really a rupture of the ligamentum patella, I elevate the foot as in fracture of the patella, and use adhesive strips to hold the patella down. In one case I inserted a Levis hook into the centre of the patella, attacked a light dog-chain to it and around the foot-board of the splint, and secured a most excellent union in this non-vascular tissue. In a future case I shall employ the same treatment or cut down and unite with stitches.

Let me say in closing that while in many cases the treatment of sprains is successful, yet many annoying things will happen. Some will improve up to a certain point and then stop. One of the most trying and unsatisfactory is a sprain of the knee-joint where the cartilage becomes displaced, the treatment of which I am not yet ready to report upon.

With moderately good fortune in the treatment of sprains by rest, compression, passive motion, forcible manipulation, friction, and massage, I can confidently recommend this treatment.

THE PHYSIOLOGICAL ACTION OF KOLA.

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The study of kola dates back several decades, and yet a review of the work done shows little advance along scientific lines, but rather a recounting of former experiments and many apparent contradictions. The chemists have lately thoroughly examined the crude drug and thus eliminated some important contradictions formerly maintained by different observers. It is true that after the lapse of a certain time, especially under certain conditions and with the abstraction of water, fermentative changes occur which eventuate in the formation of caffeine. There is some caffeine in all specimens, but most of the fresh nuts contain too little to interest the student of dynamic action. The glucoside kolanin is the active principle of kola, upon which, without much doubt, the peculiar physiological action of the drug depends; but of course its action is modified (as in all crude vegetable drugs) to some degree by other substances also present. The present writer used both the fresh nuts and their preparations, and also the dried nuts and preparations made therefrom. The action of the latter was the same as that of the former, except in degree, and only occasionally did the well known action of caffeine appear in addition to that of the peculiar active principle of kola.

The work done by the clinicians has been, as a rule, careful and painstaking, and shows less than the average amount of palpable error from hasty generalization. It corroborates the chemical evidence that kola is something more than caffeine when it is carefully analyzed; but the contradictory results make apparent the fact that some observers used a specimen of the drug rich in caffeine and poor in relative amount of kolanin. One is reminded of the historical contradictory work upon pilocarpus before the discovery of jaborine as a factor in its dynamism.

The clinicians reported the effect of kola upon the heart rate and force and upon arterial tension, and its action (primary as regards time) in preventing and lessening fatigue; but any serious work looking toward the analysis of its action upon the human economy, and especially its effect upon the nervous system in detail, is scarce.

Experiments upon the physiological action of drugs affecting the nervous system chiefly are confessedly difficult because of some special sources of error which are not very rare. The action of a drug upon man and its action upon the lower animals are here especially apt to diverge—or, more properly, to vary; then again, it is practically impossible to avoid extraneous conditions modifying cerebral action in vivisection experiments; and finally, the difficulty of finding human beings who can make an accurate observation, unaffected by the reasoning faculty, and relate this observation to another, is infinitely greater than most people imagine.* The writer has taken the greatest pains to avoid the many pitfalls inherent in a search for truth in subjective experimenting; and with years devoted to this psychological matter, he believes he has succeeded. The method used was to select a sufficient number of men of different types, mental and physical, all of whom had previously proved their training in making observations, who were familiar with the various sources of error in observing, and who knew their physiology and had the practical skill to detect and measure variations of physiological action. To each of these was given, under practically the same conditions, the same dose at the same time. The experiments lasted over a month of time, and variation of dose was especially attended to. No subject came in consulting contact with any other, and each turned in to me a written report of his observations each day. Of practical importance, as bearing on the value of the work, is the fact that there was not a single conflict of evidence, when the entire work came to be tabulated and digested, every variation of effect having a corresponding variation of dosage, personal equation of sensitiveness which was constant, or other variation of conditions and premises. A large number of correlated observations were obtained from lay patients who did not have any idea of what they were taking, but these have a less value and only as corroborating the gross features of the experimental results.

I found the dynamic action of kola to be as follows in the territory covered by the experiments:

Nervous System.—From medium doses, euphoria and an increase of intellection, slight in both rapidity and clearness of thought, and marked in capacity for sustained effort. This effect was by large doses reversed, with the production of mental

* Barr on "Basic Errors in Therapeutics," Transactions of Iowa State Medical Society, vol. xii, p. 173. 1893.

fatigue and cerebral malaise, running into actual mental paresis with a striking special effect upon the memory; one man at the table, when asked to pass a dish, found it impossible to remember the article until he could reach it with his hand; another made a determined effort to remember a single line in Gray's Anatomy after closing the book, and failed; another, a medical senior student who "never misses a question," "struck" because he could not answer the simplest questions in the recitations, and his class standing and candidacy for honors were of more importance to him than the dynamic action of kola. These are but examples of many similar observations. This cerebral paresis occurred only from large doses, and never as an after-depression; there was no after-depression in any case. For some years I have been teaching that the term "stimulation" should be divided so as to express two different ideas —one a true increased activity, followed always by depression; and the other a tonic action which increases power, and is reversed into overstimulation paralysis, but is never followed by after-depression. Referring to the cerebrum, the former class always cause a "habit;" the latter class never do. Kola belongs to the cerebral tonic-stimulants (a new word is required here), and there is certainly no tinge of habit in its effects. Medium doses produce that insomnia without excitement which is simply the lack of desire and apparent need of sleep, and is exactly like the inability to sleep an hour after arising in the morning; large doses cause a mental languor, dullness, and sleepiness, and a deep sleep which is not at all physiological and which lasts for twelve hours or more, followed by no sense of rest. Large doses produced vertigo, sense of fullness in the head, or frontal headache, in constant ratio to the size of the dose—a train of symptoms which suggested valerian toxicity strongly in its subjective sensations. Acetanilid had no effect on the pain, which was persistent until removed by sleep or exercise. The reflexes and sexual desire and capacity were slightly increased by small (and markedly lessened by large) doses; the desire for tobacco was much lessened, but without any repugnance to the weed—one simply did not smoke so many cigars per day while under the influence of medium doses, and did not think about it until afterward. The cerebral malaise from large doses suggested to the smokers the need of tobacco, but much smoking failed to remove the depression, mental or physical, even in those who do their best mental work behind a lighted cigar.

Logically, the drug acts upon the cells of the cerebrum, because the effects are entirely out of proportion to the effect upon the circulation, and are quite different from any that can be produced through the circulatory system. The selective action upon the memory also shows this. The sleep is a coma from overstimulation paralysis, and worse than useless therapeutically. The effect upon the reflexes and venery is a stimulation and an overstimulation paresis and paralysis of parts of the sympathetic system. The effect upon drug habits is simply that the euphoria renders other beverages unnecessary in the search for Utopia; there is no real effect upon the "habit" except as continued non-use destroys it.

The Digestive System.—In two hours after its administration, kola causes a marked increase in peristalsis and secretion, increasing directly with the dosage through a laxative effect, catharsis, and great diarrhea, with proportionate pain; the stools are natural in color when lax, and dark during the diarrhea, the latter removing a coat from the tongue and the clinical symptoms of "biliousness." The administration of alcoholics and aromatics relieves the pain but does not prevent the diarrhea. The effects are exactly the same whether kola is administered to a full or an empty stomach. From full doses there is a marked decrease of appetite during the primary action, and increased appetite as an after-effect. Administered after meals, kola increases the digestive power very markedly—proteids, fats, and carbohydrates.

The inference is that kola affects to a marked degree the sympathetic innervation of the muscular layer of the digestive tract and the secretory glands; the increase of peristalsis may cause the increased secretion. That the action is local irritation, is negatived by the effect not beginning for two hours; by its non-variation according to the amount of food in the stomach; and by the great action of the drug upon the sympathetic system, which a *résumé* of the whole action shows. The after-increase of appetite is probably due to the increased digestive power and largely to the less quantity of food taken previously during the primary action of anorexia.

The Circulatory System.—The heart-force is increased by kola, but the increase in the rate was not uniform and was no more than

the normal variation which is easily produced by mental action. It is manifestly impossible to make accurate determinations of the effect upon the heart-rate of a drug in the human subject in the manner of these experiments. Tension increased markedly. There was no constant effect on temperature, but sometimes a rise in direct ratio to increase in heart-action.

The conclusions are that the effect on the heart is not centric, because it is out of proportion to the cerebral increase in functional activity, and also because it lasts longer than the cerebral effects. In view of the general sympathetic stimulation, it is probable that the cardiac ganglia are the seat of the action upon the heart. The idea that there was stimulation of inhibition was abandoned because the prolongation of the diastole reported by previous observers was not constantly verified. The tension being increased much out of proportion to the increase of heart-force, gives the conclusion that the vaso-constrictors are stimulated.

The Muscular System.—There is a primary lessening of fatigue from medium doses, with increase of muscular languor and desire for rest as the result of large doses. One man indulging in athletic exercise to a great degree in a contest found the after-soreness delayed twenty-four hours and lessened in degree, but still very perceptible. Here, as in the nervous system, there is a marked overstimulation depression, but an entire absence of an after-depression. There is not the increase of power which comes from true stimulants, but only an increased capacity for prolonged exertion—the quantity of force per time unit is not increased, but the number of time units is extended. The effect upon the muscular system is in exact ratio to that upon the nervous system in every case, the overstimulation depression appearing in both simultaneously. An important fact, thoroughly verified, is that muscular exertion is the greatest antagonist to the action of the drug upon all parts of the body. The dynamic action of the drug is exactly in direct ratio to the dose and inverse ratio to the amount of muscular exertion during its time of action. Even toxic effects already begun come down to a lessened degree of dynamic action, stimulation replacing overstimulation depression, etc., when violent exercise is begun.

The Urine is lessened in quantity, the decrease being of both solids and water. The effects of the caffeine in the drug and of the peculiar active principle itself upon retrograde metamorphosis will account for the former, and the contraction of the nephritic arterioles for the latter.

The duration of the dynamic action of the dose is nearly six hours, although there was some variation in this. A second dose administered before the effects of the first had disappeared produced the manifestations of twice the quantity taken at once, both doses being in the blood at once. The larger the dose, the longer was the dynamic action prolonged, distinctly toxic doses acting for twelve hours or more. The effects began in about thirty minutes from liquid preparations, and the dynamic action was near the maximum in an hour and a half or two hours.

The author has carefully refrained from mentioning definite weights of drug as being administered, because this would certainly lead to error and probably dangerous experiences among those who pay him the compliment of utilizing his work here set forth. The quantity which will have but the slightest effect upon one individual, will produce actually alarming toxism in another. In seven persons taking the same dosage under the same conditions at the same time, there were produced seven distinct and nicely graded variations of intensity of action. The dose of kola is the quantity sufficient to produce the desired action, and anything more definite than this had better be left unsaid.

Under the same conditions of administration, a variety of different effects were noted in different individuals, but each and every one of these variations was due to a variation of degree of action upon some part of the sympathetic system. That is to say, a variation of sensitiveness causing a reversal from overstimulation out of synchronism in some special locality, was the key that explained all the apparent contradictions observed. It also explains the contradictory statements hitherto published about the dynamic action of the drug, in large degree. According to the author's law*, this drug, which greatly affects the sympathetic system, should discover a large number of idiosyncrasic individuals; and he has no hesitancy in prophesying that within a year the journals will be full of reports of untoward effects of kola and a large crop of "unusual" symptoms due to the drug.

An important thing discovered in these investigations was, that the coincident admin-

* "Idiosyncrasy and Drugs," THERAPEUTIC GAZETTE, March, 1895.

istration of strychnine or nux vomica somewhat synergized the tonic action of kola, and strongly antagonized its toxic effects from large doses. One-fortieth of a grain of strychnine prevented, to a great degree, the unpleasant depressant effects of massive doses. It is possible to overbalance the strychnine with a preponderance of kola, but the antagonism is as great as between any two drugs. The antagonism does not occur in the digestive system, which is almost a matter of course.

RÉSUMÉ.—Kola has a special action upon the cerebro-spinal and sympathetic nervous systems which is not at all like that of caffeine, and is due to some other active principle. The primary action is an increase of functional power in the cerebro-spinal system, and an inerease in functional activity in the sympathetic system; overstimulation reverses the action, as is the physiological rule, but there is no after-depression of the cerebro-spinal system and none of the sympathetic except from massive doses, and then only of the portion most sensitive to the action of the drug—certain reflexes and venery. The overstimulation paresis of the cerebrum has marked physiological effects which are dangerous if the toxism be continued. (One is reminded of the action of atropine and the French teaching of half a century ago, verified in the dispomania institutions lately, that atropine continued produces insanity.) The action of kola upon the cerebro-spinal system has marked manifestations in the muscular system. The action upon the sympathetic causes increased peristalsis and secretion, contraction of the arterioles and consequent rise of tension, the latter being partly due to increased heart-action, and this last being another manifestation of stimulation of the sympathetic ganglia. There is primary increase of the reflexes and venereal power, which is reversed from overstimulation of that part of the sympathetic before the other less sensitive portions are depressed. The urine is lessened. There is no approach to the formation of a habit, and no tolerance established. Euphoria is marked. Excretion often does not take place for over six hours, and the overlapping of doses sometimes produces toxic effects when each dose was medicinal. There is such a variation of susceptibility that no posological data can be of value. The drug has a decided action of its own, not duplicated in the materia medica, and is hence valuable, but, like all powerful drugs, must be used with discretion, and, like all drugs acting markedly upon the sympathetic system, is apt to produce untoward effects in certain individuals. The antidotes for its toxic effects are strychnine and hard exercise. Death will probably come from cardiac paralysis, but it ordinarily requires massive doses to produce this. The dry nuts produce the same effects as the fresh ones, but require a larger dose, and the effects of caffeine are sometimes shown by them parallel to those of the peculiar active principle of kola. There is no difference in quality or degree of action between the crude drug and any of its preparations as made by two of the largest importers.

Therapeutics.—The therapy of kola has recently gotten out of the bounds formerly set for it as simply a muscular tonic. The author has used it for the following conditions, with the results stated: In acute alcoholism its tonic effect in medicinal doses upon the cerebrum is shown in its great power as a "pick-me-up;" it removes the signs and symptoms of drunkenness more rapidly than any other agent, and the after-effects are much modified for the better; it is much better here than the bromides, which are so popular. For dipsomania it is useful from the sense of well-being which it produces, equal to gold and more than arsenic; it is extremely valuable in its effect upon digestion, with a permanent toning up of the digestive apparatus of such patients, this being an important part of the treatment; it has no special direct effect upon the habit, and for this latter purpose is inferior to atropine in energy. It is an aid to one quitting the use of tobacco because of the euphoria it produces, which replaces the tobacco-cheer until the patient has quit the habit long enough to no longer feel the need of the weed. For individuals of average stamina it is sufficient pharmaceutical aid in breaking the tobacco habit.

Reflex storms from various irritative pathologies are subdued by kola in full doses, paralyzing the reflexes. But its greatest value is in so building up a debilitated nervous system that a permanent cure of this condition results.

It has a certain value in cases of cardiac weakness; but many other drugs are more to be depended upon for the acute attacks, and its chief use is in permanently toning up the innervation of the heart, thus removing the fundamental pathology rather than treating the symptom.

In the treatment of melancholia it is the equal of gold, and is of real value in those

cases of temporary melancholia of mild degree which occur so often in the course of various affections.

In neuralgia it is useful in direct ratio to the amount of general nervous debility present; in most cases it is much inferior to several other drugs in common use. It is useful as a correlative treatment in chronic cases, replacing iron and other tonics.

In insomnia, great care must be taken not to produce the coma-sleep which is the result of the administration of large doses and which will aggravate the disease; in insomnia from overwork, neurasthenia, and similar conditions, kola is useful in small doses only, not given near bedtime, and acts slowly by removing the nervous tire which is behind the inability to sleep. As a pure hypnotic it is effective only in doses approaching the toxic, and the effect of its continued administration is very bad, although fortunately ceasing with the stopping of the drug.

In convalescence from acute diseases, kola is valuable when the dosage is accurately attended to, increasing digestion and assimilation and restraining waste in small doses, yet the overstimulation depression of large doses is distinctly harmful; the combination with strychnine is especially indicated here. The same remarks apply to its use in that group of symptoms due to paresis of some part of the sympathetic nervous system.

Eckley gives us a strong and able argument* in favor of the proposition that *la grippe* has for its basic pathology (at least next to a primary microbic cause) paralysis of the sympathetic. Certainly the drugs useful in that affection all strongly stimulate the sympathetic system. *A priori*, then, kola should be useful in that disease; my clinical experience is that kola is nearly if not quite as useful here as are the coal-tar derivatives in common use; it is invaluable in treating the after-depression which remains when the acute symptoms have departed; it is also very useful to relieve the sense of weakness which is one of the symptoms of the disease. But here again must be emphasized the fact that the least overdosage will do harm rather than good, and that the dose of kola for a given patient is no certain number of grains or centigrammes.

In dyspepsia of atonic origin kola is the best single drug we have to-day: increasing both secretion and peristalsis, keeping the bowels loose, toning up the nerve-supply of the digestive tract, it meets the pathology at every point. Having begun its use as an adjuvant to other treatment, the writer in most cases now discards the other measures and retains the kola. When any adjuvant is needed, it should be strychnine or nux vomica, for reasons stated before, and if there is a tendency to pain in the abdomen the kola should be given with aromatics. In chronic constipation it is a rival of *Rhamnus purshiana*, and like the latter does not require a constantly increasing dosage, but removes the paresis of the muscular coat of the intestine and promises a permanent cure.

Kola is extremely useful, properly administered, in cases of acute nervous fatigue from overwork or worry. Taken in small doses regularly for a week or so, all the nervous symptoms disappear, including the insomnia and fretfulness, a sense of well-being replaces the feeling of impending harm, capacity for work returns to the norm, and the patient is gratified beyond expression. But a slight overdosage will do harm, and strychnine will always be given simultaneously in future by the writer to prevent danger of toxism and as an adjuvant.

It is fortunate that the drug which tends to prevent harm from an overdosage of kola is also one which synergizes its therapy in practically every case. The writer has not used the combination of kola and strychnine much hitherto, as that would have vitiated the experimental value of the results. But as a matter of good practice he is convinced that the two should be combined usually in whatever use is made of kola therapeutically.

At the present writing the bibliography of kola contains reports of its use in the following conditions in which the present writer has not had opportunity to thoroughly test its value clinically: The cases of asthma reported quickly cured by kola are some of them really cases of cardiac dyspnea, from the descriptions in the reports themselves, and such cases are rationally treated with kola with doubtless brilliant results; the term "asthma" has now a wide meaning in general use, but the classical asthma which is a spasm of the lung lobules can hardly be benefited by a drug which markedly stimulates the sympathetic innervation of these same lobules, as kola does; even toxic doses do not paralyze the sympathetic vaso-motors until after the other cerebral effects are dangerous, and it is probable that heart-paralysis will be coincident with the other—so that even large,

*Transactions of Iowa State Medical Society, 1892, p. 93.

overstimulant doses are not available here.—In the treatment of morphinomania, kola will be useful like gold is, but will not be a decided improvement upon the latter; only in very mild cases will it produce sufficient euphoria to replace the morphine, judging from the energy of its dynamic action and experiences in other drug habits.—The cases of diarrhea reported cured in a striking way by kola are chiefly cases of chronic diarrhea, and the tonic effect upon the intestine together with the improvement in the digestion may have a value here; the percentage of tannin in all the samples hitherto analyzed is too small to account for any anti-diarrheal action, and it is probably in atonic diarrheas that kola will be found useful.—The author would prefer not to depend upon kola in surgical shock in the beginning, but can readily see its great use in holding up the patient after strychnine, alcoholics and other drugs have stimulated him out of immediate danger.—The effect of kola in improving digestion, toning the digestive tract, and depressing the reflexes, in medium doses, accounts for its reported usefulness in the vomiting of pregnancy; the psychological element here must not be forgotten.—In consumption it should be a valuable reconstructant, and the reports show its value clinically in this disease to that extent. Kola contracts the arterioles to an extent which makes the reported good results of its administration in hemoptysis easy to believe. It has been used in pneumonia, and has a value in the asthenic stage of this disease, but again appears the necessity for the greatest caution in its administration.—Monavon and Perroud, experimenting upon animals, are the only investigators who agree with the present writer that kola is not diuretic, but rather anuretic. All the others, even those whose experiments were confined to a limited field, as most of them are, state that it is markedly diuretic, and some report good results in the treatment of dropsy. It is an absolute certainty that specimens of kola and its preparations which are to be found in the market to-day and obtained from two of the largest manufacturers of kola products in the world, do not produce diuresis in the average human inhabitant of the western United States under normal conditions. If some specimens of the drug, some types of men, or some other peculiarity of condition induce diuresis, this effect will be irregular in its appearance and not very valuable therapeutically. The drug should be useful in dropsy of cardiac origin by removing the cause of the symptom, and probably in that of hepatic origin by increasing the functional activity of the liver; but it can never replace any other drug used as a pure diuretic.

Every one with the least experience with kola has noticed its power to prolong active exertion without fatigue; it is being advertised in some quarters directly to the athletic "profession" as an aid in winning races, and certificates of its efficacy are published by the score from prize-winners. While it has not the horrible train of consequences that follow the use of cocaine for this purpose, yet the author and his assistants feel in duty bound to file a warning that the use of kola in lay hands will bring a crop of disastrous results. The variation in susceptibility to the drug will cause some ambitious athletes to lose a lot of money for their backers, even if they do recover physically in time. In a brochure issued by a pharmaceutical house which ought to know better, is a report direct from an excellent ministerial educator stating the good effects of a certain preparation of kola in the nervous exhaustion of college tutors, to whom he seems to have recommended it; kola is not a drug which can be entrusted to the laity with safety, and they should be so informed at every opportunity. That kola has, like many other drugs, a high value in certain directions when used rationally, is manifest.

QUINCY, ILLINOIS.

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*SCURVY IN BOTTLE-FED BABIES.**

BY FRANK W. GARBER, M.D.,
Muskegon, Michigan.

Scorbutus is one of those diseases with which the practitioner of to-day has but little clinical acquaintance. The older physicians, and especially those of seaboard towns or those who have served in the Army or Navy, can recall it as one of the scourges of both land and sea. To have learned its causes and thoroughly provided against them—for it is only now and then in these days that a case is found—seems to me one of the most splendid monuments scientific preventive medicine has erected to itself. So many brilliant advances have been made in surgery in the last few years that we are apt to be dazzled by the splendor of its results, and to forget the even greater lustre of preventive medicine. If the knife has invaded regions

* Read before the Muskegon Medical Society.

heretofore sacred and untouched, and by its magic brought life and health and strength where before were only disease and death, Medicine, tender and all-merciful, has stretched forth her almost divine hand and said, "Disease, be no more!" For eighty years not a single case of scurvy was seen in the British Navy. For a thousand years before, it had been the one great enemy of army and navy. It killed more soldiers in the Crimean War than bullet or sword or all other causes combined.

It is well for us to recall such things as these, because too often medicine and surgery are compared only to glorify the latter.

Though the history of scorbutus is coexistent with the history of medicine, it is only during the last twenty years that the disease has formed any part of medical literature relating to infancy or childhood. It is probable that cases always existed among infants or children where the peculiar dietetic vices necessary to its production existed, but it is also probable that the increased use of artificial baby-foods has been in some way related to the more frequent appearance of the disease in these latter years. It is altogether likely that many of us have met scorbutus in its incipiency among infants and have not recognized the nature of the trouble. The first case that came under my care I failed to diagnose properly, and it was only in the light of a case in which I could scarcely err that I went back to the first one able to classify it.

CASE I.—J. L., female, age fourteen months. American parentage. The child had received intelligent care, and had lived under comfortable and hygienic conditions; it was bottle-fed, the food alternating between condensed milk and malted milk, upon which it did apparently well for its first year. When about a year old, the mother noticed it did not care to sit up as much as usual, and seemed to be in pain when lifted up or placed in a position where it would have to continue sitting upright by its own effort. It avoided muscular exertion. At the time of my first visit, the child looked worn and sick. It cried frequently as if in pain. There seemed to be quite general tenderness to touch, even the gentlest manipulations causing it to cry out. The thighs were tender, as was the dorsal region of the spine. The gums were slightly ecchymotic and swollen, and there were purpuric patches in the upper lid of the left eye. There was some looseness of the bowels, abdominal distention, and a temperature of 102°. The stomach was not in good condition. As at that time summer diarrhea was more or less prevalent, the case was thought to be of that nature, and treatment was ordered accordingly. The significance of the swollen, ecchymotic gums and the purpuric spots in the eyelid was wholly misunderstood. It was thought the child had received a bump over its eye, and, of course, it was cutting teeth. The latter poor old scapegoat was made to do double duty.

As the child was apparently not doing well on the prepared food, the latter was ordered discontinued, and a diet of which fresh sterilized milk with sweet-cream and lime-water were the main ingredients was substituted. In this I builded better than I knew. The child improved rapidly, and at the end of a month most of the scorbutic symptoms had disappeared. When the bowels had become normal in their action, the mother was instructed to give the child some soft egg, milk toast, and a small amount of potato.

Before this case had fully recovered, Case II came to my notice, and with its completer picture and consequent better diagnosis I was enabled during the later days of my treatment of Case I to suggest more efficient dietetic measures. The child is now completely well.

CASE II.—B. C., female, aged nine months. Bottle-fed from birth. For the first three months it was given condensed milk in the proportion of fourteen parts of water to one of condensed milk. At the end of this period it was given Mellin's Food in addition. It had never been given anything at the table or in addition to the two articles mentioned. At eight and a half months, or about two weeks before it was brought to me, it was given about a pint of fresh milk every twenty-four hours along with Mellin's Food. It began to be tender in the lower limbs at about five months. The lower incisors were cut at five months, and the upper at eight. At about the seventh month the gums were seen to be swollen and ecchymotic. For some time previous to this visit—June 27, 1895—it had not cared to sit up. The mother said "its back seemed sore." There had been almost habitual constipation. About four weeks before the child was brought to me, both eyes began to protrude from their sockets, and the soft tissues round about them seemed deeply and copiously infiltrated with blood. The left eye still showed marked proptosis, with much the appearance in the eyelids of one who had received a severe blow upon the eye. It was the ordinary "black eye," with exophthalmos.

There was great general tenderness of the body, with very little voluntary movement of the lower limbs. The baby was pale, fretful, and very restless. It did not like to be disturbed, and screamed whenever I came near. There was no apparent enlargement of the epiphyses, but the thighs seemed very tender.

A diagnosis of scurvy was made, and the parents were given to understand that the treatment must be almost wholly dietetic. The child was ordered to be placed on fresh milk, raw-beef juice, fruit juice, and potato. The parents objected very strongly to this radical change, at first, but were made to see its necessity.

On July 6, nine days after the treatment was begun, I saw the child again. The proptosis was disappearing; the face had a better look; there was freer movement of the limbs, less general soreness, and the ecchymosis about the eye was fading. The case then passed out of sight for over three months, during which time the child passed successfully through an attack of measles and one of summer diarrhea. The father told me only a few days ago that the child was well.

These two cases may be taken as fairly typical of scurvy as it presents itself in babies. They do not show all the symptoms in all cases, but with the picture of those here presented fairly fixed there can be but little trouble in arriving at a proper diagnosis. Let us summarize briefly the common symptoms of the disease as we find them in the class of cases under consideration: The baby has a worn and fretful look, a bloodless and often muddy skin; its eyes may be bulging, with ecchymotic patches in the upper lids, or there may be ecchymosis without the prominent eye; the child is peevish and often screams at your approach; the breath is foul; the gums are swollen, tender, and often ecchymotic — they extend down over the teeth, and bleed easily when touched; the tongue is covered with a dirty yellowish-brown coat; there is general muscular tenderness; the spine is often painful or sensitive to touch; the child is disinclined to sit up without support, and moves as if in pain; the thighs are swollen, very tender, and often have a shining appearance; there is often thickening of the lower end of the femur; sensation is acute, but muscular power is weak; there may be immobility of the lower limbs amounting almost to paralysis; there is a tendency toward easy fracture of the femur, the break occurring near the epiphysis. There is sometimes general purpura; indeed, these purpuric spots may be your first intimation of the constitutional vice lying back of them.

The pathology of scurvy, whether in infant or adult, is obscure. In the baby one lesion has been found with marked uniformity where post-mortem examinations could be had. I refer to the extravasation of blood between the bone and periosteum. Wide areas of bone are often thus stripped and left with small nutritive supplies. This accounts for the tender and swollen thighs. The swollen and bleeding gums and the exophthalmos are also due to extravasations of blood. An examination of the blood of those suffering with scurvy has shown a notable lessening of red corpuscles and of coloring matter, in some instances amounting to over half the normal.

In the baby the cause of scurvy is probably always dietetic. Just how the condition is brought about would be hard, and perhaps impossible, to say. The change is probably at bottom a chemical one. In the absence of fresh foods containing certain salts and acids, there seems to be a weakening of tissue metabolism. It is chemico-physiological — the absence of the chemicals contained in fresh vegetable food or its derivatives determining the phenomena of scurvy, or their presence producing health.

The question of prevention is more than one of fresh foods; it is one of fresh foods given in such form as to insure as little chemical change from a certain (not yet well defined) standard as possible. For instance, it has been found that scurvy may follow the use of fresh sterilized milk. Either with the application of heat has come about some new chemical combinations, or there may have been a destruction of germs necessary to chemical changes demanded by the baby organism in its food. Happy the child that can draw its nourishment from the healthy breast of a healthy mother! But cases are of daily occurrence where this cannot be done, and it is in this class of cases the physician finds an opportunity for the display of all his skill and knowledge.

There has been a too ready disposition to recommend some of the many prepared baby-foods on the market, or to prescribe condensed milk. So commonly is this done that many parents put their bottle-fed babies on these articles without consulting the physician at all. These methods are not creditable to the physician, and, in the light of our recent knowledge, are most culpable. There

may be instances—and these are especially liable to occur in our large cities—where fresh, wholesome milk is not to be had, where it becomes necessary to prescribe some one of the prepared foods. When this is done, however, the parents should always be instructed to give the child daily fruit juice, fresh-meat juice, or a small amount of some fresh vegetable broth. With these precautions, I have no doubt prepared foods may be safely and often advantageously given. I have for several years been in the habit of directing that all bottle-fed babies that came under my care should be fed on a diet made up fresh daily of sweet cream, fresh milk, sugar of milk, water, and lime-water, in proportions varying to meet the demands of age, size, and strength. This course has proven far more satisfactory to me than the old method of prescribing prepared foods, and seems to be based on the soundest of reasons. It seems to me the matter of prepared foods for babies is only the question of proprietary medicine in another form. You cannot make a combination of drugs good for all cases, and you cannot prepare a baby-food good for all babies.

The treatment of scurvy in babies has already been quite fully outlined. It is evident that, the cause being improper diet, the treatment should be dietetic. Drugs play an unimportant rôle. Bitter tonics, acids, and iron may be used, but nothing can take the place of fresh fruits, vegetables, and meats. The form in which these shall be given must be determined by the conditions of the individual case.

Remember that scurvy in bottle-fed babies is probably more common than we suspect. Its pathognomonic signs are swollen and bleeding gums, swollen and tender thighs, purpuric spots—these three, no two of which are absent in any case.

159 JEFFERSON ST., MUSKEGON, MICH.

SALICYLIC ACID IN DERMATOLOGY.

BY J. ABBOTT CANTRELL, M.D.,
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The value of certain drugs in the treatment of diseases of the skin depends upon our thorough knowledge of their effect; and to gain this knowledge, it necessarily takes not alone days or weeks, but actually years of persistent work. We should know whether a remedy is astringent or stimulating, whether it is soothing or curative, and whether it is likely to cause any further disturbance if applied too long. In an experience of about ten years the use of salicylic acid has proven very serviceable in carefully selected cases at my Polyclinic service. After some experience had told us in what diseases we might see good results, we placed dependence upon this knowledge, and only in a few instances were we disappointed. In advising this remedy we choose one of the following methods of application: ointments of two to fifteen per cent., with either petrolatum, lanolin, or zinc oxide, according to the amount of inflammation or infiltration and thickening; washes in strengths varying from two to twenty per cent., either with water or in an emulsion with a slight quantity of mucilage of acacia; plasters ranging from ten to twenty-five per cent. in cases in which neither of the above was indicated, according to the locality or other circumstance. The addition of a small quantity of some antipruritic was deemed advisable in a few cases.

Eczema.—Salicylic acid gave excellent results in erythematous eczema when the disease was confined to a single or small area, and especially in cases which were rather subacute; but where the eruption was more or less general or the amount of inflammation high, it was deemed inadvisable to use it. In the papular manifestations the drug was advised only in cases where there had been a coalescence of the lesions, such as is often met with upon the legs, and in these cases only when the condition was more or less chronic. If the inflammation was an acute one, or the lesions rather scattered in irregular patches, the treatment did not have the same good effect. In cases presenting vesicles as the main symptom, the drug gave excellent results when used in somewhat weakened ointments; the same effect followed its use in cases of the pustular variety. Salicylic acid gave much better results in "eczema rubrum" and the squamous varieties or where there had been considerable fissuring. Moist conditions were much benefited by weak ointments, but the results were more noticeable in cases of long standing where there had been much infiltration and thickening. I can recall many cases, such as those occurring upon the dorsal surfaces of the hands and in the flexures of the joints, where the drug acted admirably.

Fissures were reduced to the level of the surrounding healthy portions.

Pityriasis Capitis; Ichthyosis; Psoriasis; Dermatitis Exfolitiva; Pityriasis Rubra.—Desquamative eruptions yielded to the use of salicylic acid with rapidity in some instances. Pityriasis capitis in which desquamation was the marked symptom responded excellently under the use of solution in water. Ichthyosis of the mild varieties was benefited by ointments, and the affected persons gained decided relief. In psoriasis it is possible that the best effects were seen, but only as far as the removal of the scales was concerned, as the entire curative results depended upon the internal administration of suitable remedies. Dermatitis exfolitiva as a distinct disease or where it followed upon a psoriasis was alike much benefited by the use of salicylic acid, also in ointment form. Pityriasis rubra improved under mild ointments.

Tinea Tricophytina.—Salicylic acid possesses mild parasitic properties and was found very serviceable in cases which were of short duration. Ringworm of the general non-hairy parts (*tinea circinata*) was cured with mild ointment, but in the hairy regions both in the beard (*tinea sycosis*) and upon the scalp (*tinea tonsurans*) it did not respond so quickly to the use of the drug.

Favus.—The achorion fungus yielded to about the same extent as to other remedies, but if any good did result from the use of salicylic acid it was only from the stronger ointments.

Chloasma; Lentigo.—Pigmentary affections did not respond as quickly as to other remedies. Chloasma yielded only to a slight extent, but lentigo was cured in the majority of instances when treated with stronger applications.

Hyperidrosis; Dysidrosis.—Affections of the sweat-glands, both where there had been a superfluous secretion as well as where this secretion had been pent up by the occlusion of the follicular openings and the formation of vesicles at these orifices, were alike benefited greatly by the application of either an ointment or a solution of salicylic acid. It acted as a stimulant to the glandular structures, gave a proper secretion, and prevented the formation of lesions at the follicular openings, as well as removing the summit from the vesicular lesions that had formed and allowing the blocked follicles to be emptied of their contents.

Acne; Seborrhea.—Inflammatory conditions of the sebaceous glands improved under the application of salicylic acid, both in ointment and solution; acne of the papular variety was benefited greatly, and especially where induration was a marked symptom, while the pustular lesions were removed after its judicious use. Seborrhea occurring either on the scalp, chest, or around the nasal orifices, was impressed curatively by the use of an ointment.

Folliculitis; Peri-folliculitis.—Inflammatory changes in the follicles or around these structures received much benefit during treatment by means of this drug, and it could be seen that the inflammation was very much lessened while the secretions of the glands were improved both in quality and quantity.

Clavus; Warts.—Corns were softened and prepared for the action of the curette or could be removed by the finger alone. Warts also shared this softening process, and after removal by the curette were prevented from return.

Epitheliomata.—Epitheliomatous conditions, after the removal of the crusts, were removed by the action of salicylic acid in the stronger ointments, but where these new-growths had progressed for some time the drug did not give the same impression.

Impetigo Contagiosa; Ivy Poisoning.—Of the milder parasitic affections, such as impetigo contagiosa, the remedy gave a favorable impression in their treatment. Ivy poisoning was greatly and quickly relieved, while the eczema which is constantly seen after this condition was entirely removed.

Ulcers.—Both the syphilitic and non-syphilitic ulcerations were cured by the action of this drug, and in a short time it could be seen that the bases of the ulcers were healing admirably. It should be understood that during the treatment of the syphilitic ulcers internal and other proper measures were alike adopted.

Miscellaneous Affections.—A number of miscellaneous affections were treated by the salicylic acid, and in all the result was remarkably good—such as, for instance, lupus erythematosus of the face, miliaria or lichen tropicus occurring upon the trunk, molluscum contagiosum after the removal of the summits of the little grayish-white bodies; urticaria was relieved of a great amount of itching, but internal and other treatment was adopted at the same time. Nail deformities, especially of the hypertrophic varieties, were improved, and particularly where the condition was caused by an eczematous process.

The Therapeutic Gazette

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Leading Articles.

THE USE OF DIGITALIS IN CHILDREN.

We have from time to time, in the THERAPEUTIC GAZETTE, called attention to the fact that while digitalis was a cardiac stimulant of inestimable value in many cases in which there was failure of compensation in valvular disease of the heart affecting adults, it frequently not only failed to do good, but actually seemed to do harm, when administered to children suffering from similar lesions. It is a well known fact that there are a few cases of cardiac disease in adults in which digitalis also fails to do good. It is not infrequently found in cases of mitral regurgitation that the digitalis seems to cause an increase in the quantity of blood which regurgitates into the left auricle, and so causes distention of this cavity, with consequent pulmonary engorgement and distention of the right side of the heart. In children it would seem probable that this untoward effect of digitalis in mitral regurgitation occurs much more frequently than in adults. Again, those who have had the most experience in administering this drug to children under puberty will remember that it is much more apt to cause an irregular action of the heart, both as to the force of the individual beat and the rhythm, than it is in adults. And it does not seem to cause the full pulse and the improvement in circulation which we are wont to expect from its use, and very frequently some gastric disturbance is caused by it which renders its further administration ill-advised even if the circulatory symptoms have not already prevented its further use.

Our attention has been recently recalled to this matter by a brief article by Dr. Koplik in the *New York Medical Journal* of February 8, 1896, under the title, "Digitalis Poisoning in Children." Dr. Koplik records two cases in which after the administration of quite full doses of digitalis—which, however, can hardly be called poisonous,—some of the symptoms which we have enumerated speedily developed. In one case, for example, the pulse, which was at first 118, dropped to 64 without a corresponding decrease in the rapidity of the respiration, and with a slight fall in temperature. In the other instance it was noted that the heart-sounds were most tumultuous; the dose in this case was two drops of the fluid extract administered every three hours. The point is noted by Dr. Koplik that the over-action of the drug persisted for a number of days after the digitalis was withdrawn, a fact connected with the action of digitalis which is well recognized by all therapeutists—it is slow in acting, but maintains its influence for a long time. In regard to the treatment of these untoward symptoms of overdoses of digitalis, which are so apt to occur in children when full doses are given, as a matter of fact little can be done. In Koplik's cases strychnine was administered in one instance, but the most efficient remedy in his hands proved to be rectal injections of black coffee, and absolute rest in bed, medication by the mouth being impossible because of vomiting.

We believe that digitalis, if employed at all in diseases of children, should be given in very minute dose, and we have found that tincture of strophanthus produces effects in this class of patients which are similar to those caused by digitalis in adults. In other words, if the patient is under puberty, strophanthus is the first choice in the way of a drug for the condition of failure of compensation due to valvular disease of the heart, but if the patient is above puberty digitalis is of course the more reliable remedy.

THE TREATMENT OF STRYCHNINE POISONING AND TETANUS.

Whatever may be the etiological conditions which produce tetanic convulsions in man, the therapeutic indications in the treatment of cases manifesting such symptoms are clear and identical; for in all instances of poisoning derived from either nux vomica or the tetanus bacillus, there is produced a condition of hyperexcitation of the motor tracts of the spinal cord. For many years the profession have treated these conditions by the administration of drugs which were known to possess a more or less sedative influence upon those portions of the nervous system which were supposed to be affected, and while in many instances ignorance of the true physiological action of some of these drugs caused them to be employed in a wrong manner, the fact remains that, aside from the yet unproved application of tetanus antitoxin in the treatment of tetanus, our best reliance must still be placed on the administration of two drugs which physiological research has proved to directly antagonize the poison—namely, chloral and bromide of potassium or sodium. The first of these depresses the motor tract of the spinal cord, and the second the sensory tract, thereby quieting reflex activity and allaying irritation. As a matter of practical experience, however, it is also well known that in many cases of tetanus and strychnine poisoning the patient is unable to take chloral or bromide of potassium, either because of the difficulty in swallowing or because an attempt to administer these drugs results in a violent convulsion. Under these circumstances it is the duty of the physician to relax his patient by a few whiffs of nitrite of amyl, followed by chloroform, and then to administer full doses of the chloral and bromide by the rectum in a warm solution, so that they will be rapidly absorbed, keeping the patient in a condition of relaxation by the administration of the chloroform. Experimental and clinical studies daily prove that this is the most satisfactory method of treatment, particularly in strychnine poisoning, and the experiments of Wood and others have proved that the effects of chloral and strychnine are to be considered as physiologically antagonistic.

Our attention has recently been called to this matter by a report in the *Medical Press and Circular* by Mr. Lloyd, in which chloroform was administered by inhalation for as long a time as six hours in a case of strychnine poisoning which had been produced by too free hypodermic administration of the latter drug, the patient being supported in the meantime by nutrient enemata. The actual time during which the chloroform was administered was six hours and seven minutes within a period of nine hours and five minutes, and the amount of chloroform used was nine and a half ounces. The patient ultimately recovered, although suffering primarily from severe septicemia. Mr. Lloyd found that only partial anesthesia was needed to control the spasm. This is an interesting illustration of the application of our knowledge in regard to the physiological action of various remedies, and we would remind our readers that in cases of apparent collapse from chloroform full hypodermic injections of strychnine are of the greatest value.

THE HYPODERMIC USE OF GUAIACOL IN ACUTE PULMONARY TUBERCULOSIS.

Following Sömmerbrodt's well known recommendation of creosote in tuberculosis of the lungs, and the abundant literature on the subject which in due time appeared, came the claims of guaiacol, a creosote derivative, in the same pathological conditions. Still later, guaiacol was heralded as a drug which when applied to the skin would act as an active antipyretic; and recently we have heard a good deal about its value when given by hypodermic injection in the treatment of pulmonary tuberculosis.

As pointed out by Coghill in the *British Medical Journal* of March 7, 1896, Schetelig was the first to show that a vehicle was quite unnecessary for injecting pure guaiacol in these cases. Coghill tells us that on the very day on which he heard of Dr. Schetelig's method he had under his care a patient with a temperature of nearly 104°, which temperature none of the ordinary methods of treatment had been able to reduce. Three hypodermic doses, one of fifteen and two of ten minims, of pure guaiacol, at four-hour intervals, brought the temperature down to normal, with rapid amelioration of all the symptoms. He also tells us that he divides the fever of tuberculosis into two stages, namely: that which comes on soon after infection, and that which develops with the suppurative stage of the disease. It is in this suppurative stage that the injections of guaiacol

seemed to be of most value, and it is at this time that the physician is often at his wits' end as to what method of treatment to pursue. Under these circumstances Coghill endeavors to give cod-liver oil in capsule by the mouth, or some one of the bitter tonics such as calisaya, in addition to the hypodermic injections of guaiacol in such doses as have been named. He remarks that in some instances these injections of guaiacol have to be continued for some time before the fall of temperature is marked, but that when the temperature does fall it does so gradually, and that the other symptoms of the disease generally markedly improve, the cough and expectoration being decreased and the appetite and weight increased. He also asserts that a moderate perspiration usually follows the injection, and that this takes the place of night-sweats. In many instances, he tells us, only one or two minims of guaiacol are necessary for the injection, and that when we are afraid to repeat the injection we may apply the drug to the skin in the way in which it has been used as an antipyretic in typhoid fever. These injections produce a certain amount of pain, but this is so trifling as not to be a serious objection provided the needle is sharp and inserted deeply in the loose subcutaneous tissues, the buttock being the most favorable region for the injection. Coghill confesses that small areas of skin have occasionally sloughed when the injection was given too superficially.

Very soon after guaiacol is given hypodermically it is distinctly tasted by the patient, proving that it is rapidly absorbed. The great advantage claimed for the hypodermic method is that smaller doses can be given and greater effects obtained than when it is given by the mouth, and that there is no danger of disordering the digestive apparatus. Coghill even goes so far as to claim that guaiacol under these circumstances exercises an actual curative influence.

Finally, he concludes that the carbonate of guaiacol and benzoyl guaiacol, two compounds which have been recently introduced as substitutes for guaiacol, have not been found by him to possess any advantages over the original substance.

CONSERVATISM IN THE TREATMENT OF TRAUMA OF THE EXTREMITIES.

On a line with numerous papers and contributions which can be found in current literature is a communication by Réclus on the subject of amputation, or rather upon non-operative interference in the treatment of severe injuries of the extremities. This surgeon, a recognized leader—not only because of his valuable contributions to literature and his scientific attainments, but particularly from his wide practical experience,—contributes a paper to the *Revue de Chirurgie* which is almost revolutionary in its teaching.

Briefly, he holds that amputations for traumatism should be done away with. Instead of performing this operation, the crushed tissue is included in an antiseptic dressing until by natural processes the devitalized tissues are separated from those still living. His experience in this method of treatment is limited to seven cases. These, though few in number, were originally of such a hopeless character, and the results of treatment were so brilliant, that he feels justified in drawing conclusions from them.

The first case was one of extensive train crush of both feet; tarsal bones as well as the metatarsals and phalanges were involved —indeed, the feet seemed to be simply bags of blood and broken bones. The obvious indication was amputation of both legs above the ankle. The patient was profoundly shocked and exsanguinated. The parts were thoroughly cleansed and enclosed in an antiseptic dressing. The patient suffered from no fever. At the end of three weeks the first dressing was removed. Three toes of the left foot were found separated, leaving a healthy granulated wound. Of the right foot two toes were separated and two metatarsal bones were denuded. The latter were removed by slight traction. In two months cicatrization was complete. The patient recovered with perfectly useful feet.

The second case was also a railroad accident. The right leg was crushed and the knee-joint opened. The devitalized leg-tissue was removed with a snip of the scissors. The thigh was also crushed, the skin badly torn and discolored, and the tissues boggy. About six inches of the lower end of the femur was exposed. The patient was profoundly shocked. The only operation to be considered was hip-joint amputation. This in the patient's condition would have been certain death. Hence the thigh was thoroughly cleansed and enclosed in an antiseptic dressing. The next day reaction set in. On the tenth day the dressing became offensive and was removed. In four weeks all the gangrenous part had separated and the femur projected from granulating surfaces. The

periosteum was then raised for about four inches, dissected back, and the femur was sawed through. Gangrene had mainly attacked the inner side of the thigh, leaving a healthy outer portion, which was turned in, forming a flap.

Another patient had both legs crushed by a locomotive. The parts were thoroughly cleansed, and the crushed legs were enclosed in an antiseptic dressing. In six weeks the devitalized parts had entirely separated. The patient recovered perfectly.

These reported cases are typical of those which follow.

The author holds that he is quite sure that the admirable results which were attained would not have been possible had the ordinary treatment by amputation been followed, for it is true that antisepsis has no effect in diminishing shock. Réclus compares his results with the statistics of Oberst, who, in fifteen cases of disarticulation of the thigh or amputation of the femur, had five deaths, all due to shock. The principal advantage of this procedure is the avoidance of shock. It has, however, still another object. It enables the surgeon to save absolutely all the tissue which retains its vitality. Under ordinary circumstances, when amputation is performed immediately after injury, the general rule followed is to go through tissues which are certainly healthy. This always implies more or less sacrifice of tissues which could have retained their vitality.

Réclus clearly summarizes the objection to this method. He recognizes the fact that crushed tissues are always infected by germs from the skin, the clothing, or the earth, and form particularly favorable soil for the growth of such germs. Not only is the crushed limb perfectly useless, but if left in place it endangers life from profuse suppuration, from traumatic gangrene, from tetanus. An amputation wisely arranged practically does away with all these dangers. This reasoning, he holds, was absolutely incontrovertible before antisepsis attained its present position, but by the method which he puts in practice there is no fear of any such complications as have been mentioned.

Of all the cases he treated, there was no instance of diffuse suppuration, purulent infection, or septicemia. There was, however, one instance of tetanus which caused death. He holds, however, that this mortality would not have occurred had he been familiar with the resources of serum therapy. The fatal case was one of crush of the left arm. The hand and the lower third of the forearm were torn off, and the extremities of the radius and ulna projected from the wound. From the elbow-joint hung ecchymotic muscular flaps; the arm itself was torn and bruised as far as the axilla. The humerus was fractured in its middle third, and the muscles were crushed and crepitant on palpation. The only operation to be thought of would have been disarticulation of the shoulder. The patient was profoundly shocked and anemic, the temperature below 97°. The conservative treatment was adopted, the patient reacted, and the fracture of the humerus united beneath the plaster dressing. On the twenty-first day the gangrenous parts came away. Slight tetanic symptoms were manifested during the dressing, then developed into true tetanus, and caused death in three days.

Guided by this experience, Réclus subjected his last four cases to injections of tetanus antitoxin, f ʒ iiss being driven in subcutaneously in the beginning of treatment, and repeated in ten days.

As to the technique of the conservative treatment: The patient is put on the operating-table and enveloped in hot blankets, frequently renewed. Injections of artificial serum, of caffeine and of ether are given when there is profound shock. If sensibility is still thoroughly preserved, a few ether inhalations are given. The wound is thoroughly exposed; the parts are washed in soap and hot water; the skin is carefully shaved, then cleansed with a stiff brush with ether followed by alcohol and permanganate of potassium. The skin having been thus cleansed, the deeper parts are explored. The loose splinters of bone are removed, also shreds of muscle and unattached tendons. Under a forcible stream of water at a temperature of 140° F., all the irregularities and recesses of the wound are cleansed, the clots and foreign bodies being thus washed away. This irrigation is carried out with scrupulous care. The water is hot enough to be antiseptic, and moreover is decidedly hemostatic. Still another advantage, it powerfully combats shock. Following these injections, tampons of cotton soaked in permanganate of potassium are employed to dry the whole wound, especially in the regions where there has been contamination. This cleansing process having been completed, the poly-antiseptic dressing is applied. This consists of an ointment containing a number of active antiseptic substances—some absorbable, such as corrosive sublimate, carbolic acid, and

iodoform, in small quantities; others slightly absorbable, such as boric acid, salol, and antipyrin, in considerable quantities. This ointment is placed on gauze bandages, which are then packed into all the interstices of the wound. Over this is applied a thick layer of absorbent cotton and a moist gauze bandage. If discharge leaks through, fresh antiseptic dressings are applied. If the temperature does not rise and there are no disagreeable odors, this dressing is not removed for twenty-one days. At the end of this time, *i.e.* three weeks, dead parts will be separated, excepting perhaps some tough aponeuroses or tendons. The surgeon should wait until a perfectly healthy granulating surface is left. He then raises the periosteum with an elevator, saws the bone at the proper height, and approximates the granulating surfaces so that when cicatrization is complete there will be a useful stump.

It is apparent from the statements of Réclus that he would pursue this method as a routine practice, abandoning altogether immediate amputation in the primary period. Under certain circumstances this advice is excellent and is being followed by the majority of skilled surgeons. Thus it is now universally recognized by the specialists that frost-bites, scalds, and crushes of the hands and feet should be treated in general on the principle of allowing Nature to indicate a line of separation before proceeding to amputation. Thus are saved most useful parts. It is also accepted as a generally recognized principle that profound shock is a distinct contra-indication to immediate operation, and that hence it is wise in cases of severe shock to postpone intervention until the patient has reacted, in the meantime thoroughly cleansing the crushed tissues at the seat of future operation. There can, however, be no possible advantage in delaying the removal of devitalized parts beyond the time of complete reaction, save that thus may be preserved a certain amount of tissue which the surgeon would feel compelled to sacrifice. In amputations through the arm, forearm, thigh, or leg, the one, two or three inches which might be saved by conservative treatment by no means justify the risks which, in spite of Réclus's statements to the contrary, are inherent in leaving a sloughing and often infected mass of tissue in immediate contact with the absorbents of the system. Even the authority of Réclus cannot make popular a method which appeals so little to the common sense of the surgeon. In marked contrast to this teaching, and in full accord with the most advanced and enlightened sentiment of the day in regard to amputations, is the admirable paper of Estes (THERAPEUTIC GAZETTE, February, 1895), whose experience is infinitely wider and whose statistics compare most favorably with those of the distinguished French surgeon.

Reports on Therapeutic Progress

A DISCUSSION ON DOSES OF VARIOUS REMEDIES AT THE SEVERAL AGES.

BARTON opened a discussion on this subject at the recent meeting of the British Medical Association.

Sir Alfred Garrod, quoting Gaubius, fixes the ratio of ages to dosage as follows: for a child of one year, one-twelfth the adult dose; at fourteen years one-half, and at twenty years two-thirds, the adult dose; for intervening ages, proportionate gradation; under one year, the dose for one year to be divided by 12 for each month. The adult boundary line is twenty-five years.

Children sometimes rapidly pass from a slight state of illness into perhaps a most alarming condition, yet they very often quickly recover. Hence in administering drugs of any potency it is a good rule to give the medicine in frequent small doses, diminishing the dose as the symptoms improve, and leaving off the medicine directly the symptom has yielded. In this way harm is avoided.

A medicine of any marked power seems to do little harm while its potency is being used upon a definite symptom; morphine in affections of the peritoneum is a good example of this. The writer has seen children in acute peritonitis bear adult doses without harm if watched in the manner mentioned. A diagnosis of the probable cause of the peritonitis should, if possible, be first made before giving such large doses.

That the drugs administered to children should be of excellent quality goes without saying, and if patients cannot afford to go to first-class chemists, rather than use inferior drugs the medical man had better depend on treating his patient by bed, milk, broth, and water, which will carry children safely through most diseases.

The ordinary dose of liquor ammonii acetatis is too large. In large doses it causes sickness and considerable depression (cardiac and nervous). This action makes

it valuable in the treatment of pyrexia. By giving drugs at frequent intervals in small doses one gets much better results than by large doses at long intervals. The adult dose of this drug is two to six drachms; one-half to one drachm for children is given as an ordinary dose. By preference give one drachm to a child of twelve; five minims for one year, and so on up to twelve years. This dose may be given each hour for six doses, then each two or three hours according to the febrile symptoms.

Ammonii carbonas, although valuable, is not tolerated well by children, causing sickness easily. Dose, three to ten grains; for children of one year, one-quarter grain; for children of twelve years, two grains. This drug is more useful during recovery from pneumonia or bronchitic affection than in any other condition in children.

Of ammonii bromidum the dose is two to twenty grains. This drug is much more useful than bromide of potassium, as being less depressing. Children bear it in big doses if epileptic from reflex causes. A child one year old can tolerate five grains easily, say each four hours, but none of the bromides are good to persist with, owing to nervous depression and tendency to bromide rash which they produce.

Anethi aqua is very valuable in flatulence in infants. It is best given before breast-feeding or with the child's bottle, but the usual doses are taken well. One to two drachms is the dose given for infants; half of this, and diluted, is a better dose.

Antipyrin is only to be mentioned to be condemned. By reducing temperature quickly, as it undoubtedly can, it more often than not complicates diagnosis. When clinical thermometry first came in, we were encouraged to study the natural rises and falls of temperature in all the specific diseases. Seeing that in cold sponging or ice baths we have the only reliable remedy for hyperpyrexia, it is far safer to use the older diaphoretics while watching the early stages of febrile attacks, so as not to mask the well known early characteristic temperatures. The modern craze for the reduction of temperature, utterly ignoring every other point, has flooded the market with a series of dangerous antipyretics.

Liquor sodii arsenatis is perhaps the most useful and safe form in which to administer arsenic to children, chiefly because the affections requiring its use are generally the accompaniment of the acid diathesis, and hence it may be combined and taken with alkalies. Five to ten minims being the dose for adults, one might be disposed to order more than would be borne well; a child of twelve years will bear three minims in water three times a day very well; a child one year old bears one minim very well.

As belladonna so often fails in its repute for curing enuresis or pertussis, and as its full doses are so extremely unpleasant, it is wise not to employ it, excepting in small doses frequently repeated. The extract is apparently more potent than the tincture. The dry throat and the restless nights (semi-delirium) are the chief distressing symptoms.

Glycerinum boracis is a most valuable preparation. Sucked or painted freely in the mouth, it quickly cleanses that organ of all aphthous affections, and in young children is the safest and simplest, if not most efficacious, remedy in diphtheria. The dangers of ramming brushes down struggling infants' throats is great; detached membranes are likely to be pushed into the larynx or swallowed into the stomach or pushed up behind the palate, only to sow fresh areas of disease; whereas, if ten to sixty drops, according to age, are sucked every hour or two, a throat may be nearly or quite clear in twenty-four hours. If it is used in this way in surgical cases, the raw surfaces of tonsils never become white or semi-diphtheritic looking, as they are wont to do when on milk diet after throat operations. It produces no bad signs internally, and, as it is chiefly eliminated by the kidneys, further good may be done if the urinary secretions themselves are contaminated. A child of ten years can take one drachm of glycerinum boracis six or eight times in twenty-four hours without harm; a child of six months can take ten minims every two hours for several days without any harm.

Bismuth carbonas, most valuable in the diarrhea of infants from all causes, requires to be given in large doses, either with or without opium, as may seem necessary; also, being palatable, it is easily administered. The dose for an adult is five to twenty grains; infants of six months will take five grains quite easily every three or four hours, with no harmful effect.

Of calomel the adult dose is one-half grain to five grains, excluding consideration of syphilis. Other preparations of mercury are more useful where there is indication for a thorough clearing out of the intestinal tract. When there is a thick-coated or furred

tongue, nothing can equal calomel. For children under one year, one grain; two years, two grains; under seven, three grains; followed in four hours by a mild saline—magnesia citrate may be suggested as suitable. The idea that calomel causes injury to the teeth can be absolutely contradicted, and yet it is constantly quoted as a cause of deterioration which can really be traced to bad feeding or to the bad health that called perhaps for the use of calomel. The occasional extreme faintness that is noticed after the administration of calomel may be due to some impurity in the drug. In commencing laryngeal catarrh with the harsh croupy cough, if given in large doses it cuts short the attack as nothing else can. The frequent administration of smaller doses of calomel for the liver or to bring color to the stools is useless and probably harmful.

Chloral hydras: adult dose, five to thirty grains; for one year, five-twelfths of a grain to three grains is suggested. Its chief use in infants is for convulsions, which if due to any reflex cause can be controlled and stopped by steady administration of fairly large doses. Two grains every two hours for six doses were given to an infant eight weeks old without any ill-effect. In asthma this drug is always very useful. Asthma being rare under one year, but not rare between one and twelve years, doses of two to five grains should be repeated each hour during the asthmatic fit, which is generally worse at night.

Chloroformum, for surgical operations on very young children (under seven), is certainly the most comfortable anesthetic for the operator. Infants in arms do not seem to suffer so readily from chloroform sickness. There is less hemorrhage, as a rule, than with ether-administration. In children under three, who have any signs of rickets, chloroform is apt to bring on very unpleasant respiratory difficulties. Children with asthma do not bear chloroform well (differing in this respect from adults). The American plan of administering chloroform for convulsions is not so simple as the administration of large doses of chloral internally.

Camphoræ aqua is very objectionable to children on account of its taste; it is best administered diluted when there is any special reason for its being given.

Ferrum reductum: adult dose, one to five grains; for children, one-twelfth to one-half grain. However, infants under one year can easily take two grains three times a day. If there is any constipation, one-half to two grains of powdered liquorice root can be added to the iron powder with advantage, and sugar of milk may be added as a vehicle. In true anemic states this preparation reddens the blood sooner than any other. It is extremely useful in the anemias of hand-fed and rachitic children. It is less likely to disagree than any other form of iron, and has less ill-effects. The teeth may be blackened but not in any way spoiled, as they may be when tincture ferri perchloridi in acid solution is given.

Ferri iodidi syrupus is a most unpalatable mixture for children, and also more often than not seems to disagree with the function of liver and stomach; it is better tolerated in very small doses. For children who can swallow pills, pilulæ ferri iodidi are much more easy of administration.

In gastric and intestinal irritation, when the alterative action of mercury is desired, hydrargyrum cum creta is most valuable. Small doses, repeated at intervals till the stools are altered, is perhaps the most effective way of giving this drug. For children under two years, one-sixth of a grain every four hours until one grain has been taken, is a suitable dose. Children bear the drug well, and it is not likely to be followed by the faint condition that is sometimes induced after calomel. Between two and twelve years, three to five grains may be given as a single dose when required.

Vinum ipecacuanhæ is very apt after a few doses to produce nausea, even in doses of five minims. On the other hand, one drachm very often fails to produce vomiting. The adult dose is five to forty minims; as an expectorant, three to six drachms; hence for a child of one year, half a drachm should be drastic. If larger doses are given, there is much prostration and some traces of irritation of the intestines. Dose for infants under one year, one to three minims; one to twelve years, two to ten minims, or one-half a minim a year. For emesis, one-half to thirteen minims for children under one year, followed by frequent teaspoonfuls of warm water, and then tickling the throat, gives the best results. Especially indicated night and morning for loaded bronchial tubes.

Trochisci ipecacuanhæ et morphinæ are extremely useful in spasmodic irritable cough after acute stages have passed off, especially if the cough is not accompanied by much phlegm. Children under two rarely require opiates for cough. For a child from two to

twelve years old, with irritable cough, worse at night and preventing sleep, one-eighth to one-quarter of a lozenge every fifteen minutes will, after two or three doses, give much relief, and the small dose produces but little ill-effect upon digestion.

Excepting in peritoneal or enteric affections it is important to be very careful in the administration of opium or its compounds. The congestion of the pulmonary circulation, as well as that of the cerebrum, are, with constipation, its chief baneful effects. In peritonitis or troubles outside the bowel, but requiring quiet of the neighboring parts, hypodermic injections of morphine are undoubtedly most satisfactory, and the doses must be given at regular intervals to prevent the morphine sickness. In tuberculous peritonitis a child of eight will bear one-fourth of a grain of morphine every three or four hours, and, although delaying the action of bowels, it does not cause the hard lumps of feces that collect when opium is administered by the mouth.

Extractum opii liquidum is the best preparation for internal administration. Combined with bismuth it is the most reliable means of controlling violent diarrhea in children. The old dictum, one drop for each year, is a very fair division for all conditions which require decided dosage of opium, and one-twelfth of a drop for each month under one year. For controlling cough the most minute doses are sufficient, even paregoric being effective. If excretions in the bowel or lung which ought to be expelled by evacuation or expectoration are retained by the holding effect of opium, then serious harm is done. A minute dose of morphine more quickly controls the sickness of morphine than anything else. Tea, coffee, caffeine, or an effervescing saline best relieves the sickness of opium itself.

In all throat and mouth affections, potassii chloras, with potassii citras, given each hour for numerous doses, gives quick relief. The effect is depressing on the heart, chiefly in slowing the heart's action, together with some tension of arteries. A child of one year can take one grain per hour for twelve hours and then every two or three hours. A severe tonsillitis will be nearly gone in forty-eight hours with this treatment. The potassii citras is given in double the dose of potassium chlorate. If the drug is required for a longer time, liquor strychninæ can be added with good effect.

The uses of potassii bromidum are the same as those of ammonii bromidum; if continued long it increases hysteria.

Sennæ confectio is the most certain of laxatives for continued constipation, only it must be given regularly, the actual dose being gauged by test. Twenty grains to one drachm will be suitable for one year to five years.

Sennæ syrupus is extremely uncertain; many children take the adult dose without effect.

Sulphuris confectio is most unreliable in its effect.

Sulphur precipitatum vel sublimatum is the best form for administering sulphur. A child of one year requires five grains; of six months, three grains; twelve years, thirty grains. It is most useful in boils, lichen, or urticaria; in fact, in nearly all skin affections of childhood.

Sodii phosphas is practically useless, its effect is so uncertain.

Sinapis cataplasma, although so useful, is very difficult to apply to children. By diluting with a full equal part of wheat flour, the intensity of rubefacient action is diminished and made bearable.—*British Medical Journal*, Sept. 21, 1895.

WHAT IS THE DOSE OF SULPHONAL?

An inquest was recently held in Kilburn which in several respects was remarkable. But perhaps the most noteworthy feature in the whole case was the number of medical men concerned in it. The wife of a medical practitioner became seriously ill from emphysema and cardiac failure. A medical friend was accordingly summoned to attend her, and for her sleeplessness prescribed two powders of twenty-five grains each of sulphonal. Two days afterwards death occurred, and the two medical men in attendance—namely, the husband of the deceased, and his friend—drew up a report of the facts of the case and submitted them to a third medical man, requesting him to decide what the precise form of the death certificate should be. The latter gave his decision that death "from anemia and influenza" ought to be certified. This was accordingly done. But meanwhile the medical friend who had attended the case began to have some suspicions that the patient had died of some narcotic poison, and upon the strength of this conviction he communicated with the coroner, also a medical man. So an inquest was ordered and a post-mortem examination made. The result of the latter was definite enough: much organic disease was shown to be present in the various organs, and, in view of the suspicions aroused,

the contents of the stomach were saved—of which, however, it may here be remarked that nothing more has been heard. The evidence at the inquest was entirely confined to medical witnesses, and the *point de resistance* thereat was the question of the proper dose of sulphonal under the circumstances of the case. The husband admitted that he considered the doses, twenty-five grains, large ones. The report before us does not state any details as to their administration. The opinion, moreover, of the medical man who made the post-mortem was apparently to the effect that these doses were sufficient to cause death, whereupon the jury returned a verdict of death from failure of the heart's action, and requested the coroner to censure the attending practitioner. The medical coroner immediately acted upon the instructions of the jury and "severely censured" his *confrère* for prescribing so large a dose of sulphonal without first making a proper examination. Clearly, so far as the latter practitioner is concerned, it would have been better for himself if he had said nothing about having an inquiry. Moreover, as the inquiry has been closed without anything having been heard of the contents of the stomach, which were saved and forwarded to the police with a view to an analysis being made, it is conceivable that the object for which the inquest was ordered was not attained. Lastly, we cannot agree with the remark of the coroner that the doses of sulphonal were "large." The limits of the doses of this drug are fifteen to forty grains, but perhaps the coroner, as a medical man, meant that before any sulphonal was administered the attending practitioner should have made a close and careful examination of the patient's condition, which, according to the evidence, does not appear to have been done.—*Medical Press and Circular*, Jan. 8, 1896.

ON THE PHARMACOLOGY OF ETHYL BROMIDE.

HENNICKE, working under Dreser's direction, found that after white rats had been allowed to inhale air containing 2.3 per cent. of ethyl bromide for twenty-two to thirty minutes, death occurred during the night, although apparently normal recovery had followed the inhalation. Furthermore, a case of ethyl-bromide intoxication had been described by Jendritza. A domestic (eighteen years of age) was anesthetized by this substance for tooth-extraction. After the operation recovery quickly followed; neither the dentist nor (after her return) her employers noticed anything amiss; but later in the day she was found unconscious, with fixed moderately dilated pupils and locked jaws; sensibility was absent, but respiration was easy and the pulse full and regular. Ice was applied to the head, and attempts were made to rouse her, which succeeded after an hour and a half. Speech was not recovered until half an hour later.

Dreser, thinking that these ill-effects were probably due to retention of ethyl bromide in the body, perhaps in connection with the nerve cells, and the formation of decomposition products as a result of the normal metabolic changes occurring in the cells, instituted a series of experiments to determine if possible if this were the case. The most feasible explanation was a saponification of the ethyl bromide by the alkaline tissue-juices. He therefore submitted a 0.25-per-cent. solution of sodium carbonate saturated with ethyl bromide to a temperature of 36° C. for six hours. On examining the product he found a trace of bromide present in an inorganic form. He then submitted a number of rabbits to ethyl-bromide inhalations and examined the urine; in all cases, with one exception, he found a definite quantity of combined bromide present. One of the animals, which was emaciated, died one hour after the commencement of the experiment, and the time therefore was, in all probability, too short for any excretion of bromine to occur. In man also he constantly found bromine in the urine after anesthetizing with ethyl bromide. He therefore regards it as proved that the injurious effects of ethyl-bromide inhalations are due to retention of the compound in the body; this undergoes decomposition, resulting in the formation of compounds having a more toxic effect than the ethyl bromide itself.—*Medical Chronicle*, January, 1896.

ULCERS OF THE CORNEA.

WOOD WHITE, in the *Birmingham Medical Review* for January, 1896, in an exhaustive article on this subject, tells us that if these ulcers are seen in an early stage the treatment is satisfactory, as a stop can generally be put to their progress. If traumatic in origin, of course foreign bodies must be carefully looked for. The eyelashes must also be examined, as a displaced eyelash is sometimes to be found. If the ulcer is due to a conjunctival inflammation, the treatment

of this condition must not be discontinued. It will be better, however, for the surgeon himself to apply any strong astringent, such as nitrate of silver, to the eye, care being taken that the cornea is not cauterized, the use of strong astringent lotions and drops by the patient being forbidden. The author often notices that there seems to be a difference of opinion as to the advisability of applying a bandage. It is quite evident that the constant movement of the eyelids over an inflamed surface must be injurious; moreover, while the lids are open the ulcer is exposed to irritation from dust, smoke, and all the numerous particles that are present in the air; it therefore seems natural that the eye should be protected by a bandage, and he thinks this treatment should be generally adopted, excepting in cases where there is a considerable conjunctival discharge and irritation—here the application of a bandage causes the pus to be pent up within the lids, and would tend to aggravate the condition. In those sloughing ulcers which result from inflammation of the tear-passages a bandage is also injurious, and a shade or pair of protective glasses will be more suitable, combined with constant cleansing with warm antiseptic lotions. In young children a bandage must be generally dispensed with, as it is impossible to keep it properly applied, and unless it is properly applied it does more harm than good. When an ulcer tends to perforate, or has perforated, a pressure bandage is often called for, which not only keeps the lids immovable, but affords support to the weakened cornea.

Mydriatics are of great assistance to us in the treatment of ulcers. They contract the iris and ciliary vessels, dilate the pupil, and in this way reduce the vascular tension and irritation so constantly present; this acts favorably on the ulcer itself. Atropine, in combination with cocaine or not, is the most convenient. The sulphate in the form of drops (one to five grains to the ounce) may be ordered, or the alkaloids may be given dissolved in either vaselin or castor oil. When the pain is very excessive, the ulcer superficial, and there is not much evidence of deep congestion, he thinks the latter form of medication is to be preferred. In some individual instances, however, atropine gives rise to conjunctival irritation and eczema of the lids, when duboisine, daturine, belladonna, or the hydrochlorate of scopolamine will generally be tolerated. The latter, which is comparatively a new drug, he has found most satisfactory. When an ulcer is progressing and the surrounding corneal tissue is much infiltrated, more active treatment is necessary.

Of late years the galvano-cautery has been universally used with splendid results. It is not necessary to cauterize the whole ulcer, but care must be taken that the margin along which the ulcer is advancing is thoroughly destroyed. After the operation there is remarkably little reaction, and, as a rule, the inflammation soon takes a favorable turn. After the cauterization he fills the cavity of the ulcer with finely powdered iodoform or iodol, and, where pain and vascular tension is excessive, warm moist pads frequently changed will often give relief and hasten the healing process. Instead of cauterization, scraping of the ulcer is sometimes resorted to.

When these modes of treatment fail, daily applications of carbolic acid, formalin, or a saturated solution of perchloride of mercury, to the floor of the ulcer, are sometimes attended with success; and cases have been reported where the frequent dropping of water heated to 150° F. onto the ulcer has succeeded when all other methods failed. In ulcers where the sloughing tendency is marked, the constant application of warm antiseptic lotions of boric acid or the perchloride of mercury is also to be recommended; and quinine, either in the form of drops or lotion, acts well in some cases. Eserine is recommended by some surgeons in the treatment of these ulcers, and occasionally no doubt the drug is useful; it has, however, to be prescribed with great caution, because of the danger of posterior synechia in consequence of the iritis which is so often present. It must also be avoided when there is much pain or injection of the ciliary vessels. He believes that it is only in rare instances the best drug to use, and that it had better be avoided by all those whose experience is not large.

When an ulcer is spreading rapidly and hypopyon is a marked symptom, paracentesis of the cornea will often determine a rapid improvement. The pus in the chamber is occasionally stringy, and will not come away with the aqueous. Gentle traction with an iris-forceps will generally remove it; but if this is not easily done, it is better not to persist in the endeavor, as the emptying of the chamber of the aqueous will often so alter the condition that a rapid absorption of the pus afterwards takes place. The opening into the chamber must be so made that adhesion or prolapse of

the iris may not result. If this latter unfortunate accident should happen, either as a result of paracentesis or spontaneous perforation of the ulcer, the prolapsed portion of iris should be gently freed from its adhesion and excised, unless the prolapse has existed for some time or the perforation of the cornea is very large, in which case it is better to leave it.

Another way of dealing with these ulcers has been recommended by Saemisch, and is often resorted to with success. It consists in making an incision through the floor of the ulcer with a Graefe knife, both the puncture and the counter-puncture being made in the cornea just outside the margin of the ulcer.

Another method of treating cases of hypopyon ulcer has recently attracted considerable attention: that is, subconjunctival injections. Perchloride of mercury in strong solution was first employed; although the result was good, the injections were frequently followed by very severe pain and inflammatory reaction, and in some instances the conjunctiva became permanently adherent to the sclerotic. The strength of the solution was then gradually reduced till finally one of 1:4000 was used. This injection gave rise to but little irritation, and was attended with equally satisfactory results. From this it was assumed that it was the fluid rather than any specific action of the mercury that caused the improvement in the ulcer. Lately a four-per-cent. solution of common salt has been used with good effect. It is probable that the favorable results following these injections are due to a quickening influence which they have on the lymph circulation, which hastens the elimination of the noxious material causing the ulceration. It is known that salt is very active in accelerating the lymph circulation, and it is therefore probably the best agent to use. The author has tried this treatment in a few cases, and so far is favorably impressed, but hesitates to express an opinion before he has a larger experience.

When ulcers have healed, opacities of the cornea more or less dense are usually left. These are permanent, and cannot be removed by treatment; but sometimes the opacity is larger than is really needed for the healing of the ulcer, Nature being too prolific in her efforts for repair. In such cases the cornea is often opaque for some distance outside the border of the ulcer; and if the cells causing the opacity do not disappear when the ulcer has healed, clearing can often be effected by the use of the yellow oxide of mercury ointment, calomel, iodide of potash, opium, or other drugs the action of which is to increase the lymph circulation through the cornea. The yellow oxide of mercury, combined with massage of the eyeball, is the treatment most usually adopted, and gives the best results. Care must be taken not to prescribe this ointment until all inflammation has ceased and there is danger of the new cells changing into fibrous tissue.

THE RISKS OF ANESTHESIA.

It is stated that sixty-one deaths under anesthesia have occurred within the past year in the United Kingdom, of which fifty-two were from the administration of chloroform. This would be a fearful indictment against the use of that anesthetic, if supported by statistics of the relative number of patients subjected to its influence and to the influence of other anesthetics. But if the number of chloroform cases was fifty-two times the number of nitrous oxide cases, chloroform would appear to be no more dangerous, although it might have caused fifty-two deaths for one death caused by the latter anesthetic.—*Medical Press and Circular*, Jan. 22, 1896.

VALUE OF VOLUMINOUS INTESTINAL ENEMATA OF WARM SALINE SOLUTION IN POST-PARTUM OR OTHER HEMORRHAGE.

In the *Australian Medical Gazette* for December 20, 1895, McNeill tells us, first, that in cases of post-partum hemorrhage the treatment by transfusion or sterilized intravenous saline solutions has long received well merited attention; and secondly, that the value of voluminous intestinal enemata of warm water and salt in such cases is insufficiently appreciated, and such treatment applies to military and other surgery as well as to obstetric practice. But to be effectual the tube must penetrate the sigmoid flexure and command the absorptive powers of the descending, transverse, and ascending colon; therefore a long tube must be used, and the injection pushed to tension limits.

The old pathological axiom that "powers of absorption are in inverse ratio to powers of pressure" comes into force in an astonishing manner in the case of a depleted arterial system, as the case reported illustrates.

The author does not think the absorptive capacity of the large intestine has been sufficiently recognized as an alternative (on the

spur of the moment) to transfusion or intravenous injection.

A good many people join the majority every year from loss of blood—more in the battle of the bed-room than in that of the "tented field." And if it prove true, as in the writer's case, that a long enema-tube is a fair substitute for an expensive and difficult transfusion apparatus, a rather important departure in surgery has been made.

The case, very briefly, is as follows:

Mrs. X.; abortion, flooding, practically dead from hemorrhage; respiration ceased; cardiac action reduced to faint muscular contractions, audible by stethoscope; no pulse anywhere; unconsciousness absolute; body cold; power of deglutition, as well as sensation, completely gone.

The arterial system was empty when the physician was called in; in fact, the patient was practically a dead woman. Chiefly for the sake of doing "something," he poured the contents of the kitchen kettle into a large basin, cooled the water to tepid by additions from the bed-room jug to the volume of between one and two gallons, tossed in a teaspoonful of salt from the cruet, and filled the large intestine to tension limits by means of a long tube, which he happened to have attached to the syringe in his bag. Removed fetus, clots, etc., by rapid digital movement, and employed artificial respiration as for the drowned. He had injected hypodermically both strychnine and ether, with no result whatever.

After some fifteen or twenty minutes the woman began to breathe. She was soon able to swallow a stimulant, and made an uninterrupted recovery.

He has no doubt whatever that the voluminous injection saved her, and, as evidence, he states that none whatever of that large quantity of water was ever seen again. None was returned. In two days she had a "solid" evacuation, but all that gallon or so must have been absorbed into her circulation in a very short time, and, aided by artificial respiration, set her heart going again.

EGYPT AS A HEALTH RESORT.

WATSON WILLIAMS, writing on this subject in the *Bristol Medico-Chirurgical Journal* for December, 1895, states that the affections for which Egypt is best adapted may be briefly summarized as follows: Chest affections, particularly pulmonary tuberculosis, bronchitis, and asthma (especially when complicated with bronchitis).

Canney gives as pathological conditions in which the patient will derive great benefit: Phthisis—non-erethetic, hemorrhagic, non-acute cases of first or second stage (especially commencing at period of deposit without very acute symptoms), chronic quiescent with or without cavities, and cases associated with bronchitis; asthma, idiopathic and symptomatic; chronic bronchitis and emphysema; cases convalescent from pneumonia, pleuro-pneumonia, and pleurisy, where the structures have not returned to the normal state; chronic nasal and pharyngeal catarrh, and Eustachian deafness; cases of mental strain, breakdown, and irritability from overwork, especially such cases when associated with gout, arterio-sclerosis, fibroid kidney, atheroma, and age; cases of hemiplegia and paresis dependent upon vascular changes other than embolism, especially those cases which are associated in etiology with the preceding class; Bright's disease in all its forms other than acute, and albuminuria generally, and after pregnancy; rheumatoid arthritis, gout and associated lithiasis, and renal colic; cases of imperfect convalescence from acute specifics such as scarlet fever, typhoid fever, influenza, etc., and especially if the kidneys have been involved; hepatic dyspepsia and lithemia; and rheumatic fever after the attack. Sandwith has paid special attention to the question of hemoptysis in Egypt, and finds that it is a rare symptom there.

It is hardly necessary to mention all the affections in which benefit may be expected from a visit to Egypt under proper supervision. But it is well to remember that there are a large number of conditions which contraindicate this course. First, there are the very numerous patients in advanced consumption who are better at home, where they at least can have all the comforts that home alone can provide, and where they are surrounded by friends, and it is better to advise them to avoid the dangers and fatigues of a long journey only to land themselves in a hopeless condition amongst strangers. Any tendency to diarrhea amongst the phthisical, convalescences from dysentery and typhoid, well marked diabetes, and tuberculous kidneys, are unsuitable conditions.

As regards heart affections, it is difficult to understand why angina pectoris, hypertrophy and dilatation of the heart, aortic regurgitation and aneurism should not benefit by residence in Egypt; though it is neces

sary, of course, for these cases to be under the same careful treatment as would be considered necessary at home.

TREATMENT OF HEMORRHAGES.

WRIGHT, in a paper on this topic in the London *Lancet* of January 18, 1896, after considering the conditions diminishing the coagulability of the blood, deals with the question of the treatment of urticarias which are associated with deficient blood-coagulability. He thinks it probable that most urticarias fall under this category. Instances in point are the urticarias which result from eating unripe or acid fruit; these may almost certainly be attributed to a diminution of blood-coagulability due to the abstraction of calcium salts from the blood by the vegetable acids. Again, the urticaria which supervenes upon the eating of certain mollusks and crustaceans is, if one may judge by the analogy of what happens in animals, associated with a diminution of blood-coagulability. There is yet another example of the association of diminished blood-coagulability with urticaria, in the case of the urticarious eruption which, as Shore first showed, occasionally occurs in dogs whose blood has been deprived of its coagulability by an injection of peptone.

The author was led, by the analogy of these facts, to inquire whether the urticaria which frequently supervenes upon an injection of anti-diphtheritic serum is also associated with a diminished blood-coagulability, and in the few cases which have come under his personal observation he has found that the blood-coagulability is really notably diminished.

A practical point in treatment would appear to result from these considerations. Whenever we are dealing with an urticaria which is associated with a diminished blood-coagulability, any method of treatment which will augment blood-coagulability will, in all probability, exert a favorable influence upon the course of the eruption. Acting upon this assumption, he has treated the few cases of post-antitoxin urticaria which have come under his notice with fifteen- to thirty-grain doses of calcium chloride. This treatment was apparently very successful. In one typical instance the coagulation time of the patient who was suffering from acute urticaria stood at eight minutes, but within a few hours after the administration of the calcium chloride it had come down to four minutes and the rash had entirely disappeared. This method of treatment would appear, therefore, to deserve investigation at the hands of those who have frequent opportunities of observing this form and other forms of urticaria.

The treatment of urticaria by carbonic-acid inhalations would hardly appear to be a practical method. Its results would have a certain theoretical interest, as it seems probable that the nocturnal supervention of urticaria, like the nocturnal supervention or aggravation of hemophiliac hemorrhages, must have some relation to the diminished nocturnal output of carbonic acid.

In all cases of urticaria associated with diminished blood-coagulability, just as in all cases of hemophiliac bleeding, it is of the utmost importance to avoid diminishing the blood-coagulability by the administration of wine. Wines, especially the more acid ones, diminish blood-coagulability by virtue both of the alcohol and the free citric and tartaric acids they contain, which abstract lime salts from the blood. In a case which came under the author's notice incidentally, even the smallest quantity of any wine, except port wine, produced a slight edema of the fingers and an urticarious eruption; the urticaria was a mere unregarded incident in a case of incipient tuberculosis which was being treated with creosote. If, however, the urticaria was really referable to a deficiency of lime salts in the blood, it was a therapeutic indication of the utmost importance, for Metschnikoff has shown that one of the methods of defense which is employed by the organism is the encapsulation of the intra-cellular tubercle bacilli in capsules of lime.

OBSERVATIONS ON COCAINE ANESTHESIA.

CLARKE, in the London *Lancet* of January 18, 1896, says that, like many surgeons who have much out-patient work, he has for some years past made extensive use of cocaine anesthesia, and he gives his experience of it, for two reasons: first, because he is convinced that in many cases the solutions, whether used for superficial application or for hypodermic injection, are insufficiently diluted; and secondly, because, of late, improvements in the composition of solutions for hypodermic use have been suggested.

The scope of the method may be illustrated by the cases in which the author removed cutaneous tumors, such as rodent ulcer and sebaceous cysts of the scalp; circumcision; excision of simple ganglia about

the wrist and the ankle; the opening of deep abscesses, such as ischio-rectal and perineal, the skin being free from edema and redness; tenotomies; excision of tuberculous glands when free from deep adhesions; and also as a superficial application for the removal of tonsils and adenoids in adolescents and adults. The more serious operations are unsuited to the method, on account of unforeseen difficulties and complications which may arise and demand prompt and energetic measures, but in emergencies and exceptional cases—*e.g.*, tracheotomy—cocaine may be used. As an example of the use of the drug in an emergency, the case related by Mr. Hartley is of interest; that surgeon successfully tied the external iliac artery after injecting a two-per-cent. solution. In parts to which the elastic band can be applied, more latitude for the drug is obtained; thus Bryson, using a four-per-cent. solution, performed double castration after surrounding the base of the scrotum with an elastic ligature.

The smallest hypodermic dose he has observed to produce faintness and nausea was one-tenth of a grain; this was in the case of a man aged sixty-five. He has found that old people are especially susceptible, and it is advisable in every case to have brandy and amyl nitrite at hand. Probably, as is the case with chloroform, degeneration of the heart is the condition most to be feared. The application of cocaine to mucous surfaces has given rise to fatal accidents. It must, moreover, be borne in mind that many cases attributed to idiosyncrasy have been due to the use of injudiciously strong solutions or to the injection of the drug directly into veins. With proper care, even in regions rich in veins, such as the lower part of the rectum, the method may be safely practiced; thus Ricard has operated for hemorrhoids after producing anesthesia by a one-per-cent. solution, the needle being plunged deeply into the tissues and gradually withdrawn as the injection was made.

For some years the author has employed a one-per-cent. solution for hypodermic injection and a two-per-cent. solution for mucous surfaces; but latterly, influenced by the experience of Schleich, he has diminished the strength of the hypodermic injections. Schleich recommends a solution made up of cocaine hydrochlorate and sodium chloride, of each 3 grains; morphine hydrochlorate, ⅓ grain; distilled water, to 3 ounces. The addition of the sodium chloride was found to diminish the pain of injection. Bransford Lewis anesthetized the corium with this solution, but in the deeper tissues the anesthesia was not perfect. This has been Clarke's own experience, and latterly he has used a ½-per-cent. solution in removing a rodent ulcer of the nose and in other minor operations with complete satisfaction. It is impossible to keep weak solutions for any length of time without fungi appearing in them; therefore it is preferable to make the solution fresh from the solid drug for each operation. For this purpose the writer has had made for him pellets, each containing one grain of cocaine hydrochlorate and half a grain of common salt. One such pellet dissolved in three drachms of boiling water gives a sterile ½-per-cent. solution, which is cooled by placing the vessel in cold water or on ice. Tested on himself it produced in one minute complete anesthesia, which lasted exactly a quarter of an hour. When the elastic band was used the anesthesia was complete for twenty minutes, and after the band was removed at the end of this time the anesthesia lasted ten minutes longer.

When injections are made for the purpose of anesthetizing the skin, the corium should first be filled with the solution. This is accomplished by using a very fine needle, and introducing it almost parallel to the surface of the skin. A few drops are injected, causing a slight wheal to appear, and after a pause of a few seconds the needle is pushed further, and the process is repeated until the whole of the corium is infiltrated. The subcutaneous and deeper tissues are to be treated in a similar way. This method has been described in detail by Schleich [see THERAPEUTIC GAZETTE, March, 1896, page 195], but it has been used by many surgeons, including the writer, for years. The merit of showing the anesthetic effect of fluids injected into tissues so as to cause pressure on the nerves, and the suggestion of making the addition of common salt to solutions of cocaine, apparently belong to Schleich. There is, however, a limit to the desirable degree of infiltration. If the wheal produced by the entry of the fluid into the tissues is very tense, the parts remain tender and the skin red for over twenty-four hours.

As the result of a personal experiment the writer can say that for the first five minutes the band gave rise to but little discomfort, but after that the discomfort increased until at the end of twenty minutes he was glad to get it off. In an operation which can be completed within fifteen minutes the band is

not necessary, but in old people it is advisable to apply it until after the chief incisions have been made, so that the tendency to absorption of the drug may be diminished. In some cases the band is required in order to secure a wound unobscured by blood. If the band is used for more than a quarter of an hour, tenderness and redness follow in the part which has been subjected to the action of cocaine.

It need hardly be mentioned that perfect antiseptic precautions should be observed, yet some cases have come to the author's notice in which subcutaneous abscesses have followed hypodermic injections of cocaine. These have been due to the lack of simple precautions. An ideal syringe should be capable of being placed in boiling water with the other instruments, and at the same time should be perfect as a hydraulic machine. The syringe he has used for some years without any mishap answers the second, but not the first, of these requirements. By using it solely for the one purpose, and by cleansing it with a five-per-cent. carbolic solution before and after each operation, it has been kept aseptic. It is also kept in an air-tight metal case, which keeps the piston moist. The instrument was made for him by Mr. T. Hawksley, who has also brought to his notice two other instruments—one with a solid steel piston fitted with cork; this can be placed in boiling water without detriment, but the cork fittings would be liable to wear and become defective; the other is the instrument used for mercurial injections in syphilis—it has platino-iridium needles and an ingenious rubber piston (the latter would prevent its being sterilized by heat). A perfect syringe has yet to be found.

Lucas Championnière has recently suggested guaiacol dissolved in olive oil as a substitute for cocaine. The writer has tried on himself a solution of thirty grains in one ounce of olive oil, and finds it produces anesthesia but causes considerable swelling, and, while in the central part of the swelling there is anesthesia, there is much smarting at the peripheral part of the area into which the fluid has been injected. The smarting lasts much longer than the anesthesia. He is not, therefore, inclined to try this drug on patients.

THE NATURE OF ANESTHESIA.

In the London *Lancet* of February 1, 1896, the well known anesthetist BUXTON considers this subject, first pointing out that all anesthetics in common use enter the blood-stream through the lungs. The inhaled vapor in passing over the pulmonary mucous membrane produces changes in its epithelium which, according to McKendrick, Newman, and Coats, are inflammatory in character: "The capillaries are contracted, their walls become less distinct, and the blood-corpuscles in them become partially dissolved." These changes are, however, rendered less and less as the vapor employed is diluted more and more. It is probable that these effects are the result of an irritant as far as the epithelial cells and capillaries are concerned. The influence upon the corpuscles is, however, different, and, furthermore, varies in the case of different anesthetics. In every case, blood removed from the body and shaken with an anesthetic shows destruction of the corpuscles and reduction with pouring out of the hemoglobin. It would appear, also, that a similar if a less marked phenomenon occurs in the body. Da Costa, of Jefferson College, Philadelphia, has demonstrated that "etherization produces a marked diminution in the hemoglobin of the blood." He finds, also, that with destruction of the red discs a change in the character of the leucocytes becomes apparent. He has been investigating this point, and up to the present time has found that a decided diminution in the corpuscles takes place under nitrous oxide, ether, and chloroform. It is, however, not improbable that factors other than the anesthetics may be found at work in bringing about the result. The combination or association between the gaseous anesthetics or vapors and the constituents of the blood must be a loose one, since in their presence oxygen is displaced. Were they to form combinations as stable as that which carbonic oxide establishes, the anesthetic would not only displace the oxyhemoglobin but would render its reformation impossible. Hence death must result. Whether or not in certain conditions the corpuscles have less power of again taking oxygen after prolonged anesthetization, it is impossible to say. It seems probable that such is the case.

Deoxidation of the tissues was at one time thought to be the explanation of anesthesia; we now recognize that this is not so, for among other reasons we can produce profound anesthesia with hyper-oxygenation, and many deoxidating bodies have no anesthetic properties. When it is remembered that the tissues are dependent upon the red corpuscles for their nutrition, this question

of the destruction of the latter by anesthetics assumes a position of great importance. Hayem has demonstrated that in anemia and diseased states of the kidneys and liver the corpuscles are manifestly deficient in quantity and quality; and Haldane, working with Lorrain Smith, has asserted that the corpuscles possess a different oxygen capacity. If, for example, one layer of these bodies can acquire and convey a certain amount of oxygen to the tissues, another will carry more or less, as the case may be. We have yet to learn how far pathological conditions affect this oxygen capacity of blood-corpuscles. It is not impossible that the behavior of anesthetics towards the corpuscles, which it has been shown they affect so profoundly, may be such as to modify in a material degree their capacity for conveying oxygen to the tissues.

The behavior of anesthetics towards corpuscles also illustrates a further and important point in our present consideration. There is a common tendency to credit the central nervous system with absolute control over the vagaries of anesthetics, to believe that if the ganglionic centres are keeping pace with the requirements of the organism no fear of danger need be entertained. Certainly in the case of chloroform this belief is delusive. That body is a virulent protoplasm-poison. Ether and nitrous oxide also act upon undifferentiated protoplasm, and all anesthetic agents are able to influence living tissue even when devoid of nervous connections. Pickering, working with the embryonic heart, has demonstrated that not only does chloroform act directly upon tissues when they are freed from nervous control, but so far differentiates between them as to affect them in various degrees; for while chloroform depresses the rhythm, causing diastolic stoppages of the auricle and ventricle, it proves itself much more toxic to the auricle than to the ventricle. Ether stimulates the embryonic heart, although very large doses will eventually stop it in diastole. The frog's heart, again, can be removed out of the control of the central nervous system, and be again and again stopped with chloroform or ether when one or other of these is allowed to circulate through it in an adequate fluid; and while it is often impossible to restore it in the former case, it is difficult to kill it when ether is perfused. It must be, then, that these anesthetics are able, quite independently of the central nervous system, to act upon corpuscular and muscular tissue.

Thiem and Fischer's research indicates that chloroform can produce a change in the heart muscle which appears identical with fatty degeneration; while McWilliam has proved that dilatation changes in the capacity of the heart as a whole follow immediately on the inhalation of chloroform. These changes are also influenced largely by the actual quantity of chloroform contained in the blood, as well as the length of time it has access to the tissues. It is further probable that the changes which we know take place as a result of alcohol possess analogues in those brought about by anesthetics, and so that the nervous tissue is also structurally affected by them.

It appears, then, not improbable that the effects produced by anesthetics upon the corpuscular elements of the blood may sooner or later be shown to produce those destructive changes in the muscle of the heart and other tissues which are found to undergo fatty changes as a result of inhaling chloroform, etc. The lessened oxygen-supply to these tissues may, it is hypothecated, produce such structural changes. Waller and others have demonstrated the changes in isolated nervous tissue, but as yet no full research has been conducted upon the nervous elements as they occur in the body. An attempt was made in this direction by the writer in working out the physiological action of nitrous oxide gas, with results which proved the anesthetic properties of that gas. It must, then, appear probable that the changes brought about in the blood elements react upon the more stable tissues by lessening their supply of oxygen while the tissues themselves are brought under the influence of the anesthetic which the blood-stream conveys to them. The next changes which are brought about by the anesthetic are those connected with respiration, circulation, and nerve-regulation.

In obedience to stimuli conveyed from the lungs, diminution of the amount of oxygen, or its excess, leads to corresponding respiratory efforts. In association with these are the somewhat complicated series of changes in the blood-pressure, the cardiac rhythm, the dilatation and constriction of the capillary areas which go to form the blood circulation. Not only may these be thrown out of gear by impediments to the pulmonary circulation arising from asphyxia, the commonest danger of anesthetics, but they may be profoundly affected from without through skin or visceral stimuli, leading to disaster.

Oliver, by means of his ingenious instrument the arteriometer, is able to record changes in the size of the blood-vessels under various circumstances. He very kindly assisted the writer in some observations made at University College Hospital, and they found that during various stages of anesthesia the pulling upon the intestines, the spermatic cord, etc., incidental to various operations upon viscera, produced the most startling changes in the diameter of the radial artery. And these changes varied under different anesthetics. This must indicate a profound series of impressions upon the control system. To the writer's mind, many disasters under anesthesia are explicable by these observations. Under chloroform especially the shock conveyed by the removal of a tooth would, if the anesthesia were not deep, in a certain number of cases produce reflex inhibition of the heart. That this reflex inhibition does occur, has been proved by many observers, but the results of Amrus and Gartner are conclusive: even where the animal was deeply anesthetized they found weak faradic currents applied to the vagus produced a very prolonged heart-stoppage, and when the heart-pause had persisted for a certain time respiration also failed, slight spasms succeeding.

Lauder Brunton describes a form of death under anesthetics which is certainly a common one, and which, when recognized, must relieve anesthetics of the responsibility in very many fatalities. Adopting Caspar's views, he attributes these deaths to neuroparesis. Not only do circulation and respiration fail simultaneously, but all the nervous centres are instantly annihilated. The death is one from shock. It may follow shock from fear or injury; it may, and does, result from pain felt during imperfect anesthesia, or even before any appreciable amount of the anesthetic has been taken.

Anesthetics are, however, not simply dangerous *per se.* They too frequently have to be given to those whose tissues are already in a diseased condition. Take anemia, fatty degeneration, "renal inadequacy," various functional and organic diseases of the ganglionic centres—of the heart,—and cyanosis the result of obstructive pulmonary or cardiac diseases, as examples of the many pathological states which place a patient, even before taking an anesthetic, in a condition which renders him especially liable to suffer from such phenomena caused by anesthetics as destruction of corpuscles, irritative inflammatory changes in the epithelium of the lungs and kidneys, fatty changes in the heart, irregular and uncontrolled nerve-storms. All such people are sometimes compelled to take an anesthetic. In their case not only must the rules be adopted in giving the anesthetic which in the normal human being permit of the production of narcosis without interference with the vital processes of life, but full allowance must further be made for the crippled condition of their organs and tissues, so that they may, in spite of their disabilities, carry on life during and throughout the anesthesia. This is the great problem, and this it is which taxes the knowledge, skill, and resource of the anesthetist.

What, then, are the practical lessons our present knowledge teaches us? In general we must conclude that the action of the anesthetic should be restricted within those clearly defined limits which involve only the higher ganglionic centres—that under no circumstances should incomplete anesthesia be deemed sufficient for even the most trivial operation.

Of methods our present knowledge allows us to say much, but it is impossible for the writer to do more than indicate in the briefest way what rules should guide us. All methods involving asphyxial symptoms are open to grave censure. In the case of all anesthetics it is possible to produce unconsciousness and yet to avoid cyanosis. Nitrous oxide gas, once thought to be an asphyxiant, is now known to be a true anesthetic, capable of being given with oxygen or air, and of producing peaceful anesthesia without any asphyxial phenomena. Of ether the same is true. Of chloroform it must be said that any association between it and asphyxia must lead in the healthy subject to grave peril and in the diseased to fatal results.

A word further. Close study of the behavior of anesthetics makes the writer certain that all methods which employ a large quantity of anesthetic substances are faulty. The pneumonia, the renal catarrh, the cardiac asthenia, following anesthesia, are due, in most cases, not so much to the anesthetic as to the unwary way in which it is employed. When anesthesia is better understood, and those who employ anesthetics recognize more the responsibility they incur, when the examining boards demand of their candidates at least a nodding acquaintance with anesthetics and their uses, then will there be fewer fatalities and more common-sense practice of this branch of the healing art.

SOME POINTS IN PERNICIOUS ANEMIA.

HUNT, a recent physician to Sidney Ringer's wards in University College Hospital, London, reports in the *Lancet* of February 1, 1896, three cases of pernicious anemia in connection with their treatment with bone-marrow, and concludes his report as follows:

There does not seem to be much doubt that these were three cases of genuine pernicious anemia. In none of them was there any history of previous loss of blood, and careful examination failed to reveal any other diseases, so that they would not come into the category of secondary anemias.

The blood in each case was fairly typical; it exhibited in all the relative excess of the hemoglobin compared with the corpuscles, which, according to Hunter, is the only characteristic feature of the disease; poikilocytosis was also so marked as to point to the anemia being probably pernicious. No nucleated red corpuscles were seen in the blood, but it is apparently not common to find these unless films of the blood are dried and stained. In none of them was there any excess of the white corpuscles.

In two of the cases the urine was distinctly darker than usual, and in the case in which it was light, excess of hematoporphyrin was found. In one case there was very marked reduction of the urea; in none was there a noticeable deposit of uric-acid crystals.

In two of the cases gastro-intestinal disturbances were marked features.

The cardiac condition is of interest. All the cases were carefully examined for increase of cardiac dullness, as described by Dr. A. Foxwell in cases of debility; but in none of them was any dilatation of the heart detected. All three cases presented a well marked systolic murmur at the base on the left side, and in two of them there was a systolic murmur at the apex, all these murmurs being evidently due to the anemia. In the third case there was an early diastolic murmur, accurately limited to a small area just inside the apex, which is hard to account for. It evidently was not due to mitral obstruction, as it disappeared as the anemia became less. Eichorst describes three cases of pernicious anemia in which diastolic murmurs were heard, but all of these were at the base, and Dr. Sansom explains these cases as being due to a continuous venous hum produced in the vessels of the neck, the hum being overpowered during the systolic period by the murmur, but audible during the diastole. This could not have been the case here, because the murmur was only heard in the first part of the diastole, and, further, because it was not heard at the base of the heart. In all the cases it is noted that the veins at the base of the neck were full and pulsated, but that this pulsation was not due to any cardiac change is shown by the fact that they collapsed with the systole of the heart.

In none of the cases were there any ataxic or spastic symptoms such as have lately been described as due to sclerosis in the posterior or lateral columns of the spinal cord in cases of pernicious anemia.

In only one of the cases were retinal hemorrhages to be detected, but in two of them there were very well marked hemorrhages under the mucous membrane of the under surface of the tongue, nothing resembling which was seen in a large number of patients suffering from other diseases; so that it might be useful to look beneath the tongue as an aid to diagnosis in those cases in which an examination of the eyes is not convenient.

As regards the result of the treatment, it will be seen that the red marrow did not have the slightest effect in any one of the three cases, one of which began rapidly to improve as soon as the patient was treated by arsenic.

Goldscheider, of Berlin, was apparently the first to use the extract of bone-marrow. He gave it by hypodermic injections to a patient suffering from pernicious anemia; there was no improvement, and the patient died. Dr. Dixon Mann published four cases of chlorosis and secondary anemia which he successfully treated with extract of red bone-marrow, given by the mouth. Dr. Fraser first published a case of pernicious anemia which had greatly improved under a prolonged course of bone-marrow which was given continuously—arsenic, iron and salol being given with it at different periods. Dr. Barrs has described a case in which arsenic was given without affecting the anemia till paralysis was produced; bone-marrow was then given, with extremely good effects. In the same paper, however, another case of pernicious anemia was mentioned in which there was no improvement under bone-marrow. Dr. Stockman reported a case treated with bone-marrow, the percentage of corpuscles and hemoglobin sinking under the treatment. In the same number another case was reported by Dr. W. B. Drummond in which there was some improvement under bone-marrow, but a greater effect when arsenic was given in addition. Dr. Danforth reported a case cured by the administration of bone-marrow and

arsenic together. Dr. Billings fully reported two cases with red bone-marrow and arsenic successively; in one case there was no improvement with either, and the patient died; in the other there was no improvement with bone-marrow, but the patient got better readily under arsenic.

These cases only include those of pernicious anemia which have been treated with bone-marrow; cases of chlorosis and leucocythemia are also reported which have done well under the same treatment. Of these twelve cases of pernicious anemia, including the three reported above, treated with bone-marrow, two may be excluded, as arsenic was administered at the same time; of the remaining ten cases, eight did not improve under marrow, two of them afterwards doing well under arsenic, while two—the cases of Dr. Fraser and Dr. Barrs—were greatly benefited by the bone-marrow. The conclusion to be drawn seems to be that bone-marrow should not be given unless a thorough course of arsenic has been given and has failed.

One reason for the different results obtained in different cases may be the well known difficulty in diagnosis in this disease, as a case may be universally supposed to be one of pernicious anemia till death occurs, when some deep-seated disease, especially affecting the stomach or intestines, may be discovered which has caused the anemia. Another cause may arise from the differences in the bone-marrow. If it is obtained direct from the butcher it is almost certain to be white marrow from the shafts of the long bones, consisting of little else than fat—the red marrow, which is a blood-producing organ, occurring only in the ribs and cancellous ends of the bones, and requiring to be extracted from the bony meshwork in which it lies; so that in all reported cases the source from which the marrow has been obtained should be particularly stated.

A CLINICAL TEST OF SOME OF THE SO-CALLED ORGANIC EXTRACTS.

In the *Boston Medical and Surgical Journal* of January 16, 1896, COGGESHALL records his experience and experiments in the use of organic extracts, so-called, and exposes their worthlessness. He says that his excuse for asking attention to some clinical tests of cerebrine, cardine, and their congeners, is that it has come to his knowledge from time to time that these preparations were actually being prescribed by members of the Massachusetts Medical Society, and, as the unfavorable results of such experiments are not often reported, a conclusive test carefully made and frankly reported might be of service to some of the gentlemen who have thought these preparations worthy of trial.

It is not safe to say that any new system of treatment is, *a priori*, absurd, and he disagrees with those who think that in the nature of things the theory on which the supposed effects of the organic extracts are explained must be nonsense. We know too little of "the nature of things" to hazard such offhand conclusion. He states that in the first case of myxedema to which he gave the thyroid-gland treatment, a little more than three years ago, the family physician of the patient, a man deservedly respected in the community as an excellent practitioner, simply sneered and laughed in a good-natured way at the whole thing as absurd. Yet this case has since been reported by the gentleman for whom he was giving the injections as a brilliant success, and we all believe today in thyroid therapy.

But Coggeshall feels that he has seen in his own experience enough to convert into confirmed disbelief the natural skepticism with which he regarded the theory of organic extracts in general, lacking, as this theory does, all proof from the present state of physiological knowledge.

The theory alluded to has been stated by Dr. Hammond himself with perhaps as near an approach to clearness as it is capable of. His own words are these: "That all the organs of the body possess the power, when in a state of health, of secreting from the blood the peculiar substance that they require for their nutrition, and that they take this substance and no other, never making a mistake in the matter. If through disease or other derangement of function they lose this power, or if the peculiar pabulum they require is not in the blood in sufficient quantity, their functions cease to be normal. If we supply to the blood the peculiar principle which a diseased or disordered organ requires, we do that which nature, unassisted, cannot or does not do."

In the writer's experiments he made use of the following preparations: Cerebrine, ovarine, cardine, and testine, made by the Columbia Chemical Company according to the formulas of Dr. Hammond; testiculine, made by Morgan of Philadelphia, and also that made by Gibier of New York; and, finally, a test solution made by himself, and consist-

ing of 70 parts of a one-per-cent. solution of boric acid in boiled and filtered water, and 30 parts of glycerin.

The twenty-three cases experimented upon were taken, five from private practice, and eighteen from his clinic at the Boston Dispensary. As far as possible, Coggeshall selected cases to form groups of six, each group consisting of fairly typical examples of the same disease.

First, there were six cases of irritable and irregular heart in young men, without any organic lesions that he could discover; three of them were directly traceable to abuse of tobacco. Four of these cases were treated with cardine, and two with the control solution.

Second, there were six fairly typical cases of simple neurasthenia in young women. Of these, two were treated with cerebrine (Hammond), two with cerebrin (another brand), and two with the control solution.

Third, there were six cases of young women suffering from dysmenorrhea, which the most careful examination that he could make and the history of the symptoms led him to regard as the ovarian type. Of these, four were treated by ovarine and cerebrine on alternate days, as advised by the manufacturers, and two by the control solution.

Fourth, there were three cases of sexual hypochondriasis from masturbation, presenting the usual symptoms of mental anxiety and depression, with complaints of loss of memory, failing power of application, etc. These were treated with cerebrine and testine, on alternate days.

Fifth, there were two cases of paralysis agitans, treated by testiculine from Morgan and Gibier.

In none of the cases, except those in the fifth group, was any other treatment given at the same time, save that those of each group who were receiving the control solution received also more or less informal suggestion. This was carefully avoided in those under the organic extracts. In no case was the treatment continued for less than one month.

The dose of Dr. Hammond's preparations was five minims hypodermically, daily, for the first fortnight, doubled in the third week, and again doubled in the fourth week. The control solution was given in exactly the same way.

The details of the cases need not be given; the essential points were as follows: In the ovarian dysmenorrheas the treatment was begun in each case just at the end of a menstrual period, so that the next period would fall in the fourth week of treatment. The results in all these cases were absolutely negative. Four of them have since improved decidedly under other treatment. One, treated with the test solution, has not improved at all under any treatment, and suffers so much that ovariotomy has been advised as the only means of relief. One case has been lost sight of.

Of the cardiac cases, the three distinctly tobacco hearts all began to improve toward the end of the month. One of these was treated by control solutions, and improved as much as the others. Tobacco, of course, was stopped in these cases, and their improvement was no greater than the author has repeatedly seen in similar cases without treatment. The other cardiac cases could not be so easily traced to an obvious cause, but coffee, tobacco, etc., were stopped in these also; none of them showed appreciable improvement.

The neurasthenic and masturbation cases were advised as to the general regulation of diet, exercise, and sleep; and cold sponge-bathing was ordered. Without this much additional, it would have seemed unfair to expect any medicine to do its best work. Of these cases, one neurasthenic, a very imaginative girl, highly susceptible to the effects of suggestion, showed marked improvement under cerebrin for the first fortnight, while the treatment was a novelty, and during the next fortnight lost all she had gained. The others showed no marked effects at any stage of treatment. Two of the neurasthenics have since improved markedly under gymnastics, tonics, and forced feeding, with a free use of suggestion but without direct hypnotism. Two of the masturbation cases have also improved very greatly since the animal extracts were given up for other treatment.

In all the above cases, except those receiving control solution, everything was avoided which might help the effect of the organic extracts by suggestion, as the author suspected that the apparent improvement in such cases which others might have seen was traceable to the hope and expectation excited by a treatment that impressed the imagination, and by the assurances of a cure given by the physician. The patients were simply told that they were to receive a tonic which was supposed to act better if given hypodermically.

The cases of paralysis agitans were suffering too much to justify the neglect of any

means for their relief; and tonics, and especially a mixture of hyoscyamus and nux vomica, were given together with massage in one case. The treatment by injection was kept up for two months in one case. In the other the trial was still fuller: the injections were continued for four months at one time, and after an interval of three months were renewed for four months more at the request of the patient, who fancied that she saw some benefit from the first trial. The author could see no benefit in either case from the injections.

A word in conclusion as to the physiological effects of these extracts. In almost all the cases the pulse rose five to twenty beats a minute within a quarter of an hour after the first two or three injections. The subsequent injections showed no effect on the pulse. The effect noted was as marked after the use of the control solution. In some of the most nervous patients the temperature rose or fell, from one-tenth to one-half a degree, after the first few treatments. This also disappeared as the novelty wore off. In several cases the breathing was quickened by from one to four respirations a minute. All these effects occurred in some of the patients receiving control solution.

In two of the cardiac cases, sphygmographic tracings were taken before and after the first injections, and again at the end of a fortnight. They showed no appreciable or constant change. In the same two cases the author succeeded in obtaining a fairly trustworthy measurement of the daily quantity of urine, and made five examinations of specimens from each at intervals of a week. The quantity, specific gravity, and percentage of urea were not affected. The only changes were within the normal variations of health.

Coggeshall believes that these so-called organic extracts are physiologically inert and therapeutically worthless.

THE TREATMENT OF CHILBLAINS.

In an article on chilblains, published in the *Presse Médicale* of December 28, the writer deals with the local and general treatment of the affection, and with its prophylaxis. In the severe forms of non-ulcerative chilblain, when the skin is red, tense, and shining, he says moist applications should be used; the fingers, the hands and the feet should be wrapped in aseptic compresses saturated with a decoction of walnut leaves, in the proportion of from 150 to 225 grains of the bruised leaves to a pint of water. After the irritation has been allayed, the wet dressing is replaced by one of the following preparations:

(1) Boric acid, 15 grains;
Tannin, 45 grains;
Vaselin, 150 grains.

(2) Starch,
Lycopodium, of each, 150 grains;
Tannin, 45 grains.

In the less severe form it is sufficient to apply the decoction night and morning, and during the day to use one of the preparations previously mentioned.

Ulcerated chilblains, says the writer, may be treated like ordinary wounds. At first they are to be carefully washed with Van Swieten's liquor; then compresses saturated in this solution, to which an equal quantity of water has been added, are to be applied. Touching the ulcerated parts with tincture of iodine or with camphorated naphtol is efficacious, followed by an aseptic dressing of fine tarlatan covered with borated vaselin or with glycerole of starch. When the chilblains are granulating, we should touch the affected parts lightly with silver nitrate. In obstinate cases a plaster of zinc oxide should be employed.

The general treatment should not be neglected, especially in scrofulous persons. Cod-liver oil and iron iodide may be very beneficial, provided they are employed for several consecutive years.

The influence of preventive treatment is indisputable. Persons who are predisposed to chilblains should be advised to take a great deal of exercise and to avoid, as much as possible, prolonged exposure to cold; the sudden change from heat to cold, and *vice versa*, according to Brocq, are equally harmful. The continued employment of very hot water during the winter often prevents an attack of chilblains, and is a prophylactic measure which should certainly be tried. The following preparation, says the writer, has been successfully employed by M. Brocq:

Quinine sulphate,
Ergotine, of each, ¾ grain;
Powdered digitalis leaves, 1-12 grain;
Extract of belladonna, 1-60 grain.

The dose is from two to four such pills a day, to be taken before meals. This treatment should be begun before the time when the chilblains usually appear, and continued during the winter, with occasional intervals of rest. In severe and obstinate cases it acts as a vaso motor regulator and as a regulator of the circulation.—*New York Medical Journal*, Jan. 18, 1896.

ALCOHOLISM, WITH SUGGESTIONS AS TO TREATMENT.

In the *Quarterly Journal of Inebriety* for October, 1895, DUNHAM, of Buffalo, asserts that the medical treatment of alcoholism, now continued for about five days, on the average, occupies about one-tenth the time required to materially benefit these cases. The indications to be met generally are, largely, a disturbance of the nervous system, which manifests itself in an irritable disposition, sleeplessness, fits of depression, and, later, excitability, with all the phenomena of *mania-a-potu.* The digestive processes are sluggish and weak in character, the excretions are deficient, and there is a general loss of muscular tone.

The excitable stages are best controlled by chloral and bromides; or, when there is much delirium with a strong pulse, hypodermic injections of hydrobromate of hyoscine, $\frac{1}{100}$ to $\frac{1}{100}$ grain, to be repeated in six hours. In other cases smaller doses than the above will prevent the unpleasant effects of hyoscine, and yet have a good result on the cerebral congestion. Stimulants should be rapidly withdrawn, and when given should be administered in milk and other foods, but never should be given clear or "straight." If there is much nausea, it can be controlled by small doses of calomel and bismuth, frequently repeated, with nourishment, given a little at a time and often. As soon as the patient is able to take nourishment, it should be fluid in character and large in quantity, highly seasoned. If the bowels are constipated, they should be opened by injections of water and glycerin when the patient is not able to take alkaline aperients through the stomach in the ordinary manner. An infusion of digitalis, tablespoonful doses, with ten grains of citrate of potash, every four hours, will increase the urinary excretions when they are diminished. Hypodermics of the nitrate or sulphate of strychnine, with a little digitalin, are the best to overcome heart-weakness, and often relieve the delirium. Tablets made as follows for hypodermic use will be found very serviceable:

Gold and sodium chloride, 1-24 grain;
Strychnine nitrate, 1-60 grain;
Nitroglycerin, 1-300 grain;
Atropine sulph., 1-200 grain;
Digitalin, 1-60 grain;
Sodium chloride, 1-8 grain.

Cold to the head overcomes delirium when due to congestion or active hyperemia of the meninges.

When the acute symptoms have subsided, a three or four weeks' course of curative treatment should begin. A tonic, consisting of nux vomica, hydrastis, capsicum, and an infusion of gentian, should be given four times a day and in full doses. Also hypodermics of the chloride of gold in solution—one-tenth of a grain to ten minims of distilled water—should be given three or four times a day.

Tablets of the above formula are good for the first week or ten days, followed by the gold solution. The platinum needle will not corrode from the gold solution, and should be used for this reason. The infusion of gentian is used because it contains less alcohol than the tincture.

Because the chloride of gold meets so many indications in the treatment of dipsomania, there is no more reason to call it a "gold cure for dipsomania" than there is to call it a "gold cure" for consumption, where it has been used with a certain degree of success; or a "gold cure" for rheumatism with deformed joints, where it has been found valuable; or a "gold cure" for paralysis of the insane, where it is one of the most efficacious remedies.

The chloride of gold the author considers one of the chief therapeutic agents in the treatment of chronic alcoholism. It has been used in cases of melancholia, hysteria, chorea, and especially nervous troubles due to syphilis. In its physiological action it seems to be a tonic for the brain and spinal cord—an alterative like mercury; it stimulates nutrition and digestion, increases secretions and excretions, and is an aphrodisiac. Its action in this respect is like that of strychnine and phosphorus.

The belief that the impotency for a time following the treatment is due to the chloride of gold, is a delusion on the part of the patient.

Strychnine tones up the nerve-centres, and the walls of the arteries are able to contract to the normal calibre, while muscular fibres recover their healthful responsiveness.

If the alcoholic should require both punishment and medicine, as they usually do, the hypodermic method, four times a day, meets the indications beautifully. If the arms swell from the effects of the hypodermics, Goulard's extract will overcome the difficulty.

In some cases, craving for drink can only be removed by treating physical ailments. Lawson Tait reports cases of cure following the removal of the uterine appendages in

women. Indigestion is to be treated, neuralgia and nervous exhaustion to be remedied, irregular and weak heart-action to be overcome, environment and habits to be changed, syphilis and kidney trouble to receive attention. Irregular hours at meals and for sleep, the futile attempt to drink moderately, old associations in drinking, the intention to drink only beer and cider, all predispose to alcoholic excess in those who have already formed the habit.

THE HEART IN ITS RELATION TO PREGNANCY.

HANDFIELD-JONES has recently delivered a series of lectures (the Harveian) upon this subject. In the one published in the London *Lancet* of February 1, 1896, he speaks of heart-failure after delivery, and reaches some fairly definite conclusions, which are as follows:

1. Both by clinical evidence and by logical deduction we are justified in accepting the fact of hypertrophy of the left ventricle occurring in normal pregnancy as proven. In delicate and feebly developed subjects it may sometimes be absent, and in these cases signs and symptoms of cardiac insufficiency are likely to occur.

2. A certain amount of dilatation of all the chambers of the heart does normally occur in pregnancy.

3. Failure of the ventricle has a distinct effect upon the course of pregnancy. In the early months it leads to abortion, and in the later months to premature delivery. Porak confirms this point, and says that "heart troubles have an evident influence on pregnancy, by provoking metrorrhagias, by determining very often abortions or premature delivery, by producing, it may be, placental lesions, and by acting harmfully on the infant, who sometimes dies before its birth, or is born under conditions not favorable to development and disposing towards premature death."

4. The heart during pregnancy and the puerperium is specially liable to undergo fatty degeneration. This may be due to retrograde changes taking place after delivery, or may depend on the premature setting in of these changes together with an insufficiently oxygenated state of the blood, dependent partly on anemia and partly on lung disease.

5. The condition of the muscular heart-wall is of more importance during pregnancy than the valvular lesion; many women with valvular lesions pass through their early pregnancies without any sign of heart-failure, but as the heart muscle becomes deteriorated by the strain of repeated pregnancies they show increasing evidence of cardiac insufficiency.

6. Of all the forms of valvular lesion, mitral stenosis of a marked degree is the most disastrous; this is largely due to the extra strain thrown in these cases on the pulmonary circulation and the right heart. The increased arterial tension, the increased volume of blood, and the increased development of the left ventricle, all tend to produce dilatation of the left auricle and the right ventricle. The pulmonary circulation is thus kept continually congested, unless pronounced hypertrophy of the right ventricle takes place. At the close of delivery, when more blood collects in the right side of the heart, the risk is increased and the danger reaches its maximum.

The question is often brought before us: Is marriage to be permitted when the woman is the subject of chronic heart disease? Regarding this, Macdonald says: "Chronic heart disease ought to be looked upon as a grave contra-indication of marriage, more especially if it assumes the form of anything approaching to severe mitral stenosis or serious aortic incompetence. In such cases we ought, if consulted, to dissuade from marriage." On this point the author does not feel inclined to adopt Macdonald's opinion. If we read carefully over the long lists of cases of heart mischief published from time to time, we shall notice (as has been already said) that many of the women had borne several children without any complication, though undoubted cardiac mischief had existed from the time of their first conception. Provided a valvular lesion is well compensated, and the muscular tissue of the heart can be judged to be sound, and provided also that the patient is a young woman in whom processes of repair may reasonably be expected to go on at a healthy rate, there would be no just reason for forbidding her to marry. In every case it would be well, if the patient has not been under medical observation previously, to advise her to remain under medical supervision for the space of six months, or even a year, that an opinion might be formed whether the disease was quiescent and vascular equilibrium well established, or whether, on the other hand, yielding of the ventricular walls and dilatation of the cavities were slowly advancing. He quite agrees with Macdonald that we

ought not to give our sanction to marriage if, in connection with chronic heart disease, there are any serious symptoms of cardiac disturbance present, such as attacks of dyspnea, breathlessness, palpitation on exertion, hemoptysis, etc.; and this injunction ought to be the more imperative the younger the patient is and the more recent the acute disorder which has given rise to the lesion.

Abortion and premature labor often occur spontaneously in cases of failing heart; but the question is frequently asked whether it is good treatment to induce delivery in patients suffering from active heart mischief during pregnancy. The question should rather be put in another form—viz.: Do cases ever exist in which it is justifiable to bring about abortion or premature delivery? To the first form of question we must certainly answer "No," but to the second we can reply "Yes." It is true that in a certain number of cases delivery by nature's efforts alone has led to an immediate improvement in the heart's symptoms, but it is none the less true that when physicians have induced labor during the latter months because of a condition of cardiac insufficiency the result has been generally disastrous. It has been well said that the condition of any patient in whom it is thought a necessary operation is one of extreme gravity, and the mere fact of interrupting the pregnancy will not stay the cardiac degeneration which is going on. Although the patient may survive the labor, she will probably succumb during the early days of the puerperium. In practice it would seem that artificially induced labor throws more strain on the heart than when the process is originated by nature. Clearly, when the heart has already been exposed to the toil of seven or eight months' utero-gestation and is showing signs of rapid failure, it is not prudent to suddenly throw upon it the effort of labor. The cases in which we should resort to the induction of premature labor are those in which it seems desirable at any cost to relieve the diaphragm from the upward pressure of a large abdominal tumor such as the pregnant uterus.

With regard to abortion in the early months, he thinks the case is different. In many recorded instances of serious cardiac complications rendering the latter part of pregnancy, labor and the puerperium a period of continued danger, and resulting too often in death, it is clear that symptoms of commencing failure, such as palpitation, breathlessness on exertion, and malaise, had been noted as early as the third or fourth month. In such a case he fails to see the justification for exposing a failing heart to the strain of pregnancy during the remaining months of utero-gestation, and would advise immediate abortion. The emptying of the pregnant uterus at the fourth month cannot be compared with the strain of labor in the last two months of utero-gestation.

He recommends the same course in a patient who has heart disease and who has passed through three or four confinements safely; for should she become pregnant again, clinical experience demonstrates that the risk she encounters is vastly increased. No physician would lightly interfere with the course of pregnancy, but it is folly to allow things to take their course when science has taught us that the course is almost certainly laid on the downhill track.

In conducting the labor at full term, the point may be considered as established that the second stage should be made as short as possible, and that forceps or version afford most valuable aid.

Regarding the action of free bleeding during the third stage of labor, he earnestly bears testimony to its useful effect. A free loss tends to relieve the right heart from undue engorgement and considerably lessens the risks of sudden stoppage of the heart. Equally useful is the application of leeches over the liver or heart during the puerperium when blueness of the lips and face, with dyspnea and pulmonary trouble, tell a tale of an overdistended and failing right ventricle.

Of all drugs, strychnine and nitrite of amyl have seemed to the writer to be the most useful. The latter drug, by dilating the arterioles and keeping the blood in the peripheral circulation, gives temporary relief to the failing right ventricle and lessens the work of the overburdened heart. The action of strychnine as a cardiac tonic is too well known to need notice here.

In the *New York Medical Journal* of January 18, 1896, ROSENBERG specifies the earliest symptoms of the disturbed heart's action as dyspnea, palpitation, edema of the face and extremities, and bronchitis, and advises the suspension of every exertion on the part of the patient, the recumbent posture being retained during the greater part of the day. Frequent examination of the urine is indispensable. A strict milk diet must follow the finding of the first trace of albumin. As to the advisability of the early administration

of cardiac stimulants, writers are not agreed. As we do not hesitate to give these drugs in mitral insufficiency during the non-pregnant state, their administration seems to be all the more indicated when the damaged heart is suddenly called upon to perform an extra amount of work.

In case this mode of treatment is not followed by amelioration of symptoms, and the cardiac incompetency increases in spite of our efforts, the question of the propriety of terminating pregnancy may justly arise. Unfortunately, says the author, the hope is delusive that relief may be given by inducing premature labor. The reports of the majority of such cases are reports of failures, and even if premature delivery has been safely performed and the woman for the time being is improved, her condition is yet one of extreme peril from asystolism. Success can only be expected if the pregnancy is terminated before the onset of serious symptoms.

In the management of labor itself, we should endeavor to give the heart the greatest possible working space and to tone it up for the final effort; to this end the patient should be placed in a half-sitting posture, and alcoholic stimulants, camphor, strychnine and strophanthus may be given; the nitrites are indicated whenever the pulmonary circulation becomes embarrassed. The main indication is, however, to deliver as soon as possible, on account of the dangerous effect of the pains upon the heart. These operations must be performed under an anesthetic, because the mental and physical suffering of an operation without anesthesia may produce the most serious shock to the heart.

Delivery is followed by momentous changes in the circulation. If one is an adherent of Fritsch's theory, a loss of blood will appear very serious, while, according to Spiegelberg, a moderate hemorrhage may be desirable to relieve the embarrassed right heart, which he considers the immediate cause of heart-failure. Ternier, Berry Hart and others report cases in which excellent effects from venesection were observed, and, backed up by these authorities, one is justified in trying the treatment. The writer has administered nitroglycerin with the same object in view. The effects of full doses of nitroglycerin or amyl nitrite are identical with those produced by venesection; they lessen the strain upon the heart by dilating the small peripheral vessels throughout the body.

The expulsion of the placenta should not be hurried. The statement has been made that Crédé's method is not advisable in these cases, since it is apt to cause too sudden a change in the vascular pressure; manual removal of the placenta has been advised, that detachment might be gradually accomplished, but the prolonged anesthesia thus necessitated is a serious objection.

During the puerperium the heart demands constant watching, as a large number of cases have ended fatally within a few days or weeks after confinement. Rest, simple diet, and appropriate stimulants form the rational basis of treatment.

SODIUM BICARBONATE IN THE TREATMENT OF "A COMMON COLD."

BULKLEY tells us, in the *Medical Record* of January 18, 1896, that from personal experience and after many trials he has settled down to the following plan for treating the early stages of coryza in an adult of medium size and weight: Twenty to thirty grains of the bicarbonate are given in two or three ounces of water, every half-hour, for three doses, and a fourth dose at the expiration of an hour from the last one. Two to four hours are then allowed to elapse, that the effect may be seen, and the four doses are repeated if there seems to be necessity, as is frequently the case. After waiting two to four hours more the same course may be taken again, although this is not often necessary if the treatment has been begun early in the course of the "cold." He has known the doses to be repeated four times, with final good result.

As intimated, the method of treatment under consideration relates more especially to the early stage. To be promptly effective, it should be begun with the earliest indications of coryza and sneezing, and in the author's experience has rarely failed to break it up, even in persons much inclined to "colds." After the second or third day it acts less promptly, and more frequent repetitions are needed, but he has seen very good results even much later in the trouble.

When the influenza has more of the contagious character, now recognized as "grippe," the treatment is less efficacious, but is still often of service. In these cases he has combined phenacetin, five to ten grains, with ten to twenty grains of soda, and given the powders, with hot water, every two hours continuously for a day or two. He has had a large number of very striking instances of the benefit of this plan of treatment, in the past two years and especially during this fall

and winter; in some cases the treatment was begun several days after the commencement of the disease, and in one instance after it had lasted about four weeks. The latter case occurred quite recently, and the almost immediate relief to many distressing symptoms —headache, cough, malaise, etc.—was very striking; the patient was a remarkably intelligent gentleman, aged forty-five, who had been under varied treatment for the entire time.

The *modus operandi* is based upon the idea that there is an acid condition of the system developed, which is sufficient to irritate the terminal endings of the nerves in the skin and mucous membranes, and so to render them susceptible to impressions of cold, by a derangement of the capillary circulation. As this acidity is neutralized, the normal conditions return. All are familiar with the favorable effects of diaphoretics, whether medicinal or mechanical, as hot-air baths, or hygienic, as frictions and exercise, in breaking up a "cold." The soda seems to act in relieving the internal cause of the surface irritation, and has always been used singly and alone, without the aid of other measures.

In regard to the dosage: twenty to thirty grains, so often repeated, he has never known to cause regret that it had been administered. The dose of bicarbonate of sodium is stated to be from ten to sixty grains, while some of the other preparations of soda may be taken in very much larger quantities—notably Glauber's salt, which is often given in from half-ounce to ounce doses.

RECENT CONTRIBUTIONS TO RENAL SURGERY.

Editorially the *Boston Medical and Surgical Journal* of January 16, 1896, deals with this topic. It is remarked that the conservative surgery of the kidney is a subject which has of late begun to attract an attention in the surgical world proportionate to its importance.

Fenger recently called the attention of the Philadelphia Academy of Medicine to the advantages of lumbar incision in hydronephrosis, and subsequent operation for the removal of the valve-formation in the ureter which had caused the hydronephrosis. By this means the lumbar fistula was made to heal, and complete cure attained. He also reported a successful operation for valve-formation between the sacs of a sacculated kidney: by division of the walls between the sacs, a single sac was produced, communicating freely with the pelvis of the kidney. He also reported a case illustrative of the value of resection of the diseased portion of a kidney, instead of nephrectomy, in a case of tuberculosis limited to the lower third.

Our statistics with regard to renal surgery have been recently enriched by Hildebrand, who, in a recent number of the *Deutsche Zeitschrift für Chirurgie*, gives the result of operations practiced for divers affections of the kidneys at König's clinic at Göttingen.

Thirteen cases are reported of nephrectomy for tumors—7 in children of from one to seven years of age, and 6 in adults past the age of forty years. Of the seven children, none had hematuria, and apart from some emaciation all were in excellent condition. It all these seven cases the tumor occupied the right kidney. No diagnosis had been previously made of the histological form of the tumor. Ablation was made through the peritoneum—that is, by the abdominal method—and was performed in most cases without a great deal of difficulty.

In one case the tumor had invaded the large blood-vessels, and in another the mesenteric glands, and the removal was consequently incomplete. In one case the laparotomy revealed a soft sarcoma; a severe hemorrhage necessitated tamponment of the cavity. Only one of these children succumbed to the operation; all the rest, after three or four weeks, left the hospital well. Five of the tumors were sarcomata, the sixth a congenital cyst complicated with sarcoma, and the last a carcinoma. The six patients who survived the operation afterwards succumbed to a return of the disease or to metastases (in from two and a half months to a year).

The six adult patients had all suffered from hematuria for several months or several years before the operation. No exact diagnosis was made of the nature of the renal tumor. Extirpation was effected in all the cases but one by the lumbar way. In several subjects the operation was very difficult by reason of adhesions and hemorrhage: in three cases the tumor adhered to the liver, and in another to the vena cava. In one of the subjects the operation was abandoned on account of both kidneys being found affected with cystic degeneration. Of the tumors removed, three were found to be angeio-sarcomata, one sarcoma, and one carcinoma. Two patients succumbed a short time after the operation. The patient with cystic degeneration of both kidneys died of uremia in five days; of

the three others, two succumbed at the end of several months, and one only, a woman, from whom an angeio-sarcoma was taken, remained in perfect health at the end of twenty months.

The results of these operations thus proved to be as bad for the adults as for the children. Evidently the extirpation of the kidney in cases of malignant tumor has little chance of success unless practiced early, as soon as the diagnosis can be made with sufficient certainty.

A case of fibro-myo-osteo-sarcoma of the capsule of the right kidney is reported; the patient was a man aged thirty years. The tumor, which had been mistaken for a floating kidney, filled the whole right side of the abdomen; it was soft in places, with adjoining parts hard. There was no hematuria. This morbid growth was easily removed by median laparotomy. The tumor had developed between the intact kidney and the supra-renal capsule. The patient got well in six weeks; he was seen a year afterwards and was in good health.

There is a very interesting case of a perinephritic blood cyst in a girl nineteen years of age. The cyst could easily be felt under the left lower ribs as a firm elastic globular tumor. There was no hematuria, and it was impossible to decide whether the tumor was connected with the kidney or with the spleen. It was brought to view by a retro-peritoneal section, and proved to be an enormous sac, from which a liter and a half of fluid blood was evacuated, with some clots. The internal wall had the aspect of a mucous surface; the cyst had developed outside the intact kidney. The margins of the opening were sutured to the external wound. The patient, who had previously been in a miserable state of health and bed-ridden, got well in a little less than three months. Histological examination proved the cyst to be a simple hematoma; the internal wall of the sac had no epithelial lining. This hematoma was supposed to be the consequence of the rupture of an aneurism. The patient was perfectly well at the end of twenty-seven months.

There was one case of echinococcus of the left kidney which had been diagnosticated as sarcoma, in a little girl of five years. The child succumbed the day after the operation.

There were four cases of hydronephrosis and eight of pyonephrosis treated either by incision or nephrectomy; two deaths.

In three cases of tuberculosis of the kidney with concomitant vesical catarrh, extirpation of the diseased kidney was followed by complete recovery. The patients were all in good health several years after the operation. These were regarded as cases of primary tuberculosis of the kidney.

In two other cases there was tuberculosis of the kidney and extensive tuberculosis of the bladder; here the renal disease was supposed to have originated in and extended from the bladder; the patients succumbed during or shortly after the operation. It is observed that renal tuberculosis may long remain latent, while tuberculosis of the bladder soon manifests itself by the symptoms of cystitis. When there is concomitant renal and vesical tuberculosis it is not always easy to tell in which organ the disease occurred primarily. According to König, renal tuberculosis is in many cases of arterial origin and not consecutive to a tuberculous affection of the bladder or of the male genital organs.

Of eight patients on whom nephrectomy was performed for tuberculosis of the kidney, four got well, and have remained well for several years. The four that died lived a variable time, from twenty-four hours to six weeks; on three of these an autopsy was obtained, and in one the other kidney was found to be absolutely free from tuberculosis. These facts, as well as those of Tuffier and Steinthal, prove the frequency of unilaterality of the lesions, and fully justify surgical interference in renal tuberculosis.

Nephropexy for mobile kidney was practiced in twelve cases (eleven being on the right side); no death. The operation was successful in all the cases but one, a young hysterical female, in whom laparotomy practiced subsequently for other reasons showed that the kidney remained fixed in its normal place. Of the eleven other patients, six were cured completely and permanently. The fixation of the kidney is made by means of four sutures, two being of silk and two of catgut. The threads are passed in deeply through the renal substances, with a distance of three or four centimeters between the points of entrance and the exit.

A NOTE ON THE USE OF PERMANGANATE OF POTASSIUM IN DISEASES OF THE SKIN.

The *New York Medical Journal* of February 8, 1896, tells us that Dr. L. Duncan Bulkley, of New York, states that he first learned from a patient the value of permanganate of potassium as a remedy for itching in various

skin diseases. The mode of using it was to paint over the affected surface a one- or two-per-cent. solution of the salt, and allow it to dry. Sometimes it was advisable to follow this with a lotion of calamine and zinc. The permanganate, of course, left a brown stain, and by its oxidizing action reduced thickened patches of skin.

CURE OF A CASE OF TETANY AFTER TREATMENT WITH THYROID EXTRACT.

Both myxedema and tetany are sometimes observed to follow extirpation of the thyroid. Nevertheless, the greater number of cases of tetany show no corresponding thyroid lesion. The nature of this form of spasm is so obscure, and the remedies employed against it accomplish so little, that it seems justifiable to follow any indication which points to a new way of help. This is the reasoning of Dr. Max Levy-Dorn, in the *Therapeutische Monatshefte*, February, 1896.

Gottstein was the first one to try the treatment for myxedema in tetany. The patient had had the disease already twenty years, and the thyroid was deficient. Symptoms of myxedema were wanting, however; the blood-cells, instead of being swollen, were strikingly small and shriveled. Twice a healthy thyroid gland was implanted in the belly cavity, but the efforts failed, although transient improvement occurred as the result of absorption of the gland. Then thyroidin was administered. The number and violence of the attacks diminished markedly, long absent sleep at night returned, and the woman increased so much in strength and quiet that she could resume her housekeeping. Also she lost Trousseau's and Chvostek's phenomenon, namely, the possibility by pressure in the neighborhood of nerve-trunks of exciting an attack, as well as the increase of the mechanical excitability. A complete cure, however, did not result up to the time of publication, which was after four and a half months' treatment.

Levi-Dorn, however, says he has treated one of Professor Oppenheim's patients with thyroidin and obtained a lasting cure. The case is especially interesting because not only were all symptoms of myxedema absent, but the thyroid gland appeared to be perfectly healthy.

The patient was a tailoress, twenty-one years old. Three years before she came under observation she had sought to relieve herself of sweating fingers by cold hand-baths. Since then she has had at times spasms in both hands—the fingers would become so tightly clenched that they could not be loosened by the free hand; after a few days the hands would recover their natural flexibility.

July 7, 1894, the spasms occurred in connection with the premature birth of a boy. The child died at 6½ months, of convulsions. The spasms had the old form, continuing only a few days, always limited to the upper extremities. Then there set in frequently a feeling of itching in all the limbs. The patient experienced great wearinesss, drowsiness, increasing heat, and anxiety. The weariness was greatest on rising in the morning. A tendency to profuse perspiration was of long standing. The disturbances increased.

The patient's father had worked for twenty-five years in metals, especially lead and mercury, but showed no sign of poisoning. The mother died of tuberculosis of the lungs. Five brothers and sisters died at an early age, from scrofula or weakness, or both (four of them were twins). As to the patient herself, she presented all the symptoms which belong to tetany. Pressure upon the internal bicipital sulcus caused paresthesiæ in the affected arm, followed by the typical position. The fingers were held in position for holding a pen, or clasped into a fist with the thumbs turned in. The mechanical excitability of the nerves was much increased. [The author here continues to give a detailed account of the symptomatology, with the reactions to electric currents, which leave no doubt of the case being one of tetany.] The disease seems to have been started by the chilling of the hands and to have been aggravated by the premature labor. No association with any infectious disease or poisoning or stomach disease could be established, nor could any disease of the thyroid be discovered.

Tablets of thyroidin were now given, one tablet daily, and rapid improvement followed after three days. The spasms ceased after the sixth dose, to return temporarily fourteen days later, after menstruation. Apart from this the patient has remained completely cured of her tetany. Her general condition has decidedly improved, so that she can work again. Altogether not more than seventeen tablets were taken. Health has persisted four and a half months without medication. Each tablet contained three-fifths of a grain of thyroidin.

THE TREATMENT OF SEVERE SPASMODIC TORTICOLLIS.

In the *Boston Medical and Surgical Journal* of February 27, 1896, COGGESHALL concludes a paper on this topic by expressing the following opinions:

First, that no very good reason can be given why the operation of neurectomy should be performed.

Second, that the neurologists generally have not given a trial to massage, gymnastics, and suggestion, sufficiently prolonged, or carried out with sufficient attention to detail, to warrant them in expressing a positive adverse opinion.

Third, that his own experience with these methods of treatment has been sufficiently satisfactory, as far as it has yet gone, to justify him in pursuing the same methods in the future until further experience shows that they fail when carefully tried.

Fourth—and of this he speaks with much more certainty that he is right—no proper trial of massage has been made if it has not been combined with medical gymnastics, and if the operator has not been chosen with the same care that would be employed in selecting a surgeon, and with a care which extends even beyond the consideration of technical skill in massage and gymnastics, to the question of fitness as to general intelligence, force of character, and natural or acquired tact to exercise the proper influence upon the patient.

ON THE USE OF THYROID EXTRACTS IN MENTAL DISEASE, WITH REPORT OF CASES.

In the New York *State Hospitals' Bulletin* for January, 1896, BABCOCK records the results reached by him in the St. Lawrence State Hospital for the Insane. The experiments with thyroid were taken up with three main objects in view: first, to definitely ascertain its physiological action; second, to determine thereby in just what classes of cases it might best be used to promote recovery; third, to apply it therapeutically.

Extracts made from the thyroid gland have a definite physiological action; an unvarying strength of any given amount can be obtained by proper preparation; and the true thyroid preparations have no relationship with the so-called animal extracts which have achieved so much unfavorable notoriety of late.

The preparation used in the hospital was the desiccated thyroid extract (Parke, Davis & Co.), ten grains of which equal an average fresh gland of the sheep, one grain equaling 6¼ grains of fresh gland. The preparation when freshly made was found to be of uniform strength, fairly agreeable to take, and free from disagreeable effects in moderate doses.

The dosage and method of administration varied according to the personal idiosyncrasies of the patient. In most cases five grains was the initial dose and was given in capsules. The action of this dose was closely watched for a few days; then it was gradually increased, unless the symptoms contra-indicated its further use. With the exception of two cases, little or no reaction was obtained from five grains, and the dose was increased to ten grains. Nearly all cases reacted more or less quickly to this dose, and in many the physiological limit seemed to be attained. In a smaller number of cases the reaction to ten grains was milder, and fifteen grains were soon given. This seemed to be the maximum dose that could be given with safety for any length of time, and then only to patients whose physical health was impaired only slightly if at all. A few of the patients, notably cases of melancholia with delusions of persecution, refused to take the extract either in capsule or powder; it was then disguised by mixing with some regular article of diet, and regularity of administration was thus obtained.

The results of treatment in the thirteen cases are, briefly, as follows: Two recovered —a case each of melancholia and mania; seven improved, of whom two will probably recover—five cases of melancholia and two of mania; four cases underwent no change—two cases each of mania and melancholia, all of whom were undoubtedly demented, to some extent, when treatment was inaugurated.

While the mental improvement, in suitable cases, dates from the first rise of temperature, the greatest improvement accompanies the gradual subsidence by lysis of the febrile reaction. As a general rule, the higher the temperature during treatment the greater the mental reaction following its fall, and the more marked the convalescence thereby established. When temperature subsides and continues normal for forty-eight hours, the thyroid should be stopped and general therapeutic measures substituted. Much harm may be done if treatment is prolonged beyond this stage. Hydrotherapy, static electricity, and massage will now be indicated in most cases and found useful to promote convalescence.

The rapid loss of weight ceases with the

last dose of thyroid, and during convalescence the assimilative and nutritive processes, highly stimulated but held in abeyance during active treatment, rapidly rebuild the wasted tissues. The voracious appetite, improved color, and rapid gain in weight, all betoken great activity of cell-nutrition, and in most cases are accompanied by an improved mental condition.

The gain in body-weight following thyroid treatment is very rapid. Within two weeks after the administration of the last dose, most cases gained anywhere from 6 to 20 lbs. During course of treatment in one case thyroid was stopped for five days and patient gained 13 lbs.

The result of this study shows that cases of post-melancholic hebetude following a lengthy period of depression offer the best prospect of improvement, and are more or less influenced in the majority of instances.

Cases of stuporous melancholia of long duration are usually improved by thyroid, though the cases which recover appear to have a special predilection to relapse.

Maniacal cases whose attacks have been unduly prolonged give a very encouraging prognosis. The first recovery in this series occurred in a case of recurrent mania (1841) whose attacks (second) had been unduly prolonged. Recoveries in this class hold no greater prospect of permanency than recoveries without special aid. The attack has simply been cut short by the thyroid, and, other things being equal, a recurrence is more than probable.

Cases of cerebral exhaustion following acute delirium or stupor, whose elimination of urea and other nitrogenous compounds is greatly reduced, offer a fair chance of improvement. While the majority of these cases would probably recover without the aid of thyroid, their residence in the hospital can be cut short in many instances by its judicious use.

Many cases of chronic mania without fixed delusions may be benefited by a course of thyroid treatment. In suitable cases their maniacal outbursts may be lessened in intensity, a greater degree of self-control may be obtained, and their condition rendered more comfortable in many respects, without injury to their physical health.

In doubtful cases thyroid may assist in clearing up the diagnosis. It will early differentiate between true stupor and dementia. In delusional cases of a doubtful nature a course of treatment will usually show whether delusions are fixed or temporary, as the latter will vary in character or entirely disappear during treatment, while the former undergo no change whatever.

The subject of thyroid-feeding in insanity has received such able treatment at the hands of Dr. Lewis C. Bruce, of the Royal Edinburgh Asylum, and Dr. C. K. Clarke, Superintendent of the Rockwood Hospital, Kingston, that little remains to be done in the direction of reporting the physiological effects of this method of treatment, however much our knowledge of its therapeutic value may require to be extended. With these introductory remarks, the medical staff of the WILLARD STATE HOSPITAL of New York make the following report on the early effects of thyroid-feeding in insanity:

The treatment herein referred to consisted in the administration, first, of thyreoidin (Parke, Davis & Co.) in tablet form, each tablet containing one-half grain of the product, which was represented to be equivalent to five grains of the gland; and, later, of desiccated thyroid, sold by the same firm.

The cost of thyreoidin in tablets is considerably greater than that of the desiccated gland, and apparently it possesses no advantages over the latter. The patients, twelve men and ten women, were all cases which were not progressing toward recovery, but among them were a number who were considered not entirely hopeless, provided the proper impetus could be supplied to start them on the road to mental health—cases of commencing dementia following acute insanity, of hebetude and depression constituting chronic melancholia, and of stupor with controlling delusions. Two of the men were suffering from general paresis, having a syphilitic history; several of the women were old cases of puerperal insanity, which had not done well; while some of both sexes were confirmed dements, in whom, as in the cases of general paresis, no curative effect was anticipated. One, a terminal dement, was included in order that the effect of the treatment upon a chronic skin affection (psoriasis) might be observed.

All were given a thorough physical examination to begin with, including analysis of the urine, and none were passed for treatment who were found to be suffering from any serious organic disease.

They were weighed before being put to bed, and for several days before the administration of the remedy a record was made of

the temperature, pulse, and respiration in each case.

Commencing with one tablet of thyreoidin thrice daily, the dose was rapidly increased to eight t. i. d., and this dosage maintained for from four to six days. Treatment was then discontinued for one week, owing to the supply of the drug being exhausted, after which they were given desiccated thyroid, at first eight grains t. i. d., increased after two days to twelve and then to sixteen grains after each meal.

Viewing the cases *en masse*, the following bodily symptoms were noted:

The pulse-rate was accelerated in the majority of cases, though in only a small number did it exceed 100 and in but three reach 120. There was diminution of arterial tension as a very constant feature, while irregularity and intermittence were noted in several of the patients.

Slight increase in the respiratory rate was observed.

In only two cases did the temperature fail to rise above the normal point, but in none was there any marked elevation, while a number of the patients had subnormal temperature, even during the period when the physiological action of the medicine was most obvious; so that, on the whole, lowering of the temperature was noted as frequently and to as great a degree as elevation.

Flushing of the skin, with more or less injection of conjunctiva, occurred in practically every case, and this condition was, as might be expected, coincident with softening of the pulse and increase in the amount of perspiration.

A fair appetite was preserved during the first week of treatment, after which there was a lessened desire for food, and in a few instances nausea and vomiting were induced.

The tongue was lightly, and in some cases heavily, coated, and most of the patients were constipated. In only one was diarrhea noted during the treatment, and this was regarded as an accidental complication.

Headache was frequently complained of concurrently with the flushing of the face and other signs of more active circulation.

Loss of weight was the most noticeable of the results obtained. In one case it amounted to 20 lbs., and in five others the decrease was from 12 to 15 lbs. Some, however, lost only a few pounds, while one patient actually gained 2 lbs., and another weighed exactly the same at the end of the treatment as when it was commenced.

Tremor and muscular twitchings were noted in five cases, occurring in the extremities as well as in the tongue and facial muscles, and some of the patients who had no actual twitching of the muscles were observed to be quick and jerky in their movements.

Amorphous urates were present in the urine of a few patients who had exhibited marked febrile reaction, but further than this nothing noteworthy was elicited by the examination of this secretion.

Some of the patients were left in a markedly debilitated state by the treatment; several required stimulation with wine or whiskey and heart tonics; and one exhibited such pronounced weakness of the heart's action that the medicine had to be discontinued after a trial of one week.

In at least one case, which was previously most discouraging, there seems to be a fair prospect of recovery, and others are improved, though their cases are not so definitely hopeful.

BONE-GRAFTING EXTRAORDINARY.

Nothing is wasted in nature, according to the proverb, and Mr. Waterhouse emphasized this fact in a case which he brought before the Medical Society of London. Having found it necessary to scoop out the body of the os calcis for the removal of tuberculous disease, a foot was left in which this important bone was represented only by a yawning cavity, bounded by a thin shell of compact bone. The outer wall of the cavity was wanting, and the floor was badly damaged. This resourceful surgeon thereupon requisitioned the collar-bone of a lamb (part of a shoulder of lamb which has been served for the dinner of the resident medical officers of the hospital). He decalcified the bone by steeping it in hydrochloric acid, freed it from fat by washing it in ether, and then sterilized it by immersing it in solution of carbolic acid of suitable strength. The bone, having been converted into chips, was made into a paste with iodoform and packed carefully and tightly into the gaping cavity, over which the skin was securely sutured, and the foot was then put up in an antiseptic dressing. It was not dressed again for a fortnight or so, and by that time healing was complete, and has so remained ever since.

We gather that this is the seventh or eighth case in which Mr. Waterhouse has employed this procedure with the same measure of success, and on this ground the method com-

mends itself for general adoption in this class of cases. We have seen a finger grafted onto or into a nose, and a chicken-bone used to patch up this or that small bone, but the utilization of a lamb's collar-bone to build up an absent heel is as interesting, and even as extraordinary, as either.—*Medical Press and Circular*, Feb. 12, 1896.

THE TREATMENT OF WEAK FOOT.

WHITMAN (*New York Medical Journal*, Nov. 16, 1895) describes and illustrates a very ingenious brace, for full understanding of which the original article should be consulted. The author concludes as follows:

The principles of the treatment which leads to the permanent cure of the weak foot and flat foot are very simple, but their application varies somewhat according to the grade and duration of the deformity. The object of treatment is to change the weak foot, not only in contour but in habitual attitudes and in power of voluntary motion, to those of the normal foot, because a cure is impossible until function is regained. The first step must therefore be to make passive motion free and painless to the normal limit, for the obstructions to the motion of the machine must be removed before the power can be properly applied. The increase of muscular strength and ability on which ultimate cure depends is not possible while motion is restrained by deformity or pain or by adhesions or contractions.

The weak foot, because of inefficient ligaments and muscles unable to hold itself in proper position, must in many instances be supported until regenerative changes have taken place in its structure. Such support is necessary to retain the joint in proper position, to hold the weight in its proper relation to the heel and the strain in its normal relation to the foot.

When these essentials are provided, the patient may cure himself by the proper functional use of the foot and by an avoidance of attitudes that place it at a disadvantage.

It may be well to describe, first, the treatment that must be applied to all classes of weak foot in which a cure is to be attempted, and which by itself is sufficient in the milder types, before calling attention to the modifications that may be necessary in special cases.

In practically all cases it will be necessary to provide the patient with a proper shoe, for the shoe is usually directly the cause of the minor deformities, and indirectly, in many instances, of more serious disability. The shoe should contain sufficient space for the independent movements of the toes. This motion is illustrated in the walk of the barefoot child. As the weight falls on the foot the toes expand, and as the body is raised on the foot they contract.

A very good demonstration of a proper sole may be made as follows: The bottom of a normal foot is smeared with vaselin, and an imprint made on a sheet of white paper. As the weight is borne, the outline of the foot is traced with a pencil; the imprint will show the weight-bearing portion of the foot, the outline its actual size. The sole of the shoe should at least be wide enough to support the entire imprint, and ought to be sufficiently wide to include the entire outline of the foot. The ludicrous disproportion between the size, width and shape of the ordinary woman's shoe and the imprint and tracing of the foot is often a very convincing argument in favor of a change.

The prevention of distorted toes and discomfort of the abused foot is a matter of great importance in childhood. It should be insisted that the sole of the shoe be of such shape and width as to allow of independent movement of the toes. Unfortunately, little children are often seen wearing shoes of the shape usually assumed at years of discretion. In this regard girls suffer more than boys, as women do more than men. The girl who may have worn comparatively harmless shoes until the age of ten years or thereabouts changes suddenly to the high heel and narrow sole, and the process of distortion begins, the amount of distortion and the degree of discomfort depending on the amount of work required of the foot. Wide soles and no heels should be worn as long as possible by children for protection from injury and because the high heel limits the necessity for, and therefore the use of, the entire range of motion of the foot and ankle.

A simple expedient in the treatment of the weak foot, and an aid in balancing it properly, is to raise the sole and heel of the shoe slightly on the inner side to simulate the wearing away on the outer side, as in the use of the normal foot. This aids in overcoming the valgus, and is of special importance in the treatment of the weak foot in childhood.

When the patient stands properly balanced in the proper shoe, his attention should be called to the three elements of weakness. He should be instructed to guard against valgus by throwing the weight on the outer

side of the heel; to guard against abduction by keeping the toes almost straight in front of the body; the significance of the bulging on the inner side of the foot should be pointed out to him, that he may prevent this by aiding the arch by the power of the great toe, as already illustrated. The importance of leverage is shown him; he must try to feel the sole of the shoe with his toes, and the active life of the calf muscles by fully extending the leg and raising the body on the foot from time to time. He must avoid long continuance in one position, especially the passive posture, which simulates the attitude and deformity of flat foot. In short, he is instructed in the mechanics of the foot and its voluntary protection.

Although the proper walk is the best of exercises, it is important to show the patient the normal range of motion in all directions and let him endeavor to reach it by voluntary exercises. Raising the body on the toes, first on both feet, finally on one foot, for from twenty to one hundred times, is a very good exercise for the foot and for the calf. In many instances this very simple treatment is all that is necessary, and the symptoms of strain and tire completely disappear; but in cases of more severity the patient is not able to prevent deformity voluntarily, consequently a support is necessary to hold the foot in proper position and to relieve discomfort. Support is usually necessary in the weak and flat foot of childhood, because one cannot command the self-help of the patient.

In applying a support to the weak foot, the nature of the deformity that is to be prevented must be borne in mind: that the flat foot, for example, is not a direct breaking-down of the arch, as is usually taught, but a lateral deviation and sinking—a compound deformity, as has been already described—so that a brace, to be efficient, must hold the foot laterally as well as support the arch; at the same time it should not prevent the normal motions of the foot and thus interfere with the increase of muscular strength and ability, on which ultimate cure depends. The supports that have been ordinarily used for flat foot do not fulfill the conditions; the pads and springs placed beneath the arch are intended to support it by direct pressure, without regard to the valgus or the abduction; they are usually ill-fitting and often of such length and shape as to splint the foot and thus prevent its motion. Leg-braces which control the valgus do not often accurately hold the foot, and their weight and unsightliness are fatal objections to their use in the early cases, in which prevention of subsequent deformity is of such importance. No brace should be applied to a deformed and rigid foot, because it is unable to shape itself to the support; the spasm and rigidity must be first relieved by preliminary treatment, as will presently be described.

The brace, cut of the best sheet steel, 18 to 20 gauge, is moulded upon it and tempered, so that as it is applied for the purpose of preventing deformity it may be practically unyielding to the weight of the body.

In the treatment of children, the passive movements of the foot should be carried out to the full limit at morning and night, until the child has regained the ability to perform them voluntarily. Special gymnastics and massage are of service and may be necessary in certain cases. Bicycling may be cited as one of the best, and roller-skating as one of the worst, exercises for the weak foot. A year is about the time required for a cure of the weak foot in childhood, although attention to the shoes and the attitudes must be kept up indefinitely.

One may now contrast with the mild types of weakness that have been described, those cases of extreme deformity in which the symptoms are disabling and the foot is rigidly held in the deformed position by muscular spasm. Such cases, often considered hopeless as regards care, or even relief, are in reality the most satisfactory, and in no other type of painful deformity can so much be accomplished by rational treatment.

The deformity must be considered as a dislocation, in which the astragalus has slipped downward and inward from off the os calcis, which in turn is tipped downward and inward and into a position of valgus. The remainder of the foot is turned outward, so that the relation of the leg to the forefoot is entirely changed; in fact, the forefoot is almost entirely disused. With the deformity one finds, it may be, local periostitis, new facets in the bones, active and passive congestion, and the like.

The amount of permanent change in the bones in the sense of irremediable deformity has been greatly exaggerated by the few post-mortem examinations that have been recorded, for by far the greater number of patients are young adults in whom the extreme deformity is of comparatively short duration and in whom complete cure is possible.

The problem in treatment, therefore, is

first to replace the dislocation and to remove all the obstructions to free passive motion, to rest the injured and congested tissues, and to relieve the sufferer from the continuous and debilitating pain. The patient is etherized, and, the muscular spasm being completely relaxed, one may estimate the amount of restriction of the range of motion. Of this, muscular spasm makes about half; the aim now is to remove this residual obstruction to motion in every direction, and finally to place the foot in the attitude most opposed to that which has been habitual. This is the object of forcible overcorrection as the first step in the systematic repair of the disabled mechanism; its principle must not be confounded with forcible correction carried out with the object of remoulding the arch of the foot or in which the simple correction of the deformity is the object in view.

One first extends the foot forcibly, then flexes it to the normal limit, then abducts and adducts, the various motions being carried out over and over again until the rigid foot has become perfectly flexible; it is often necessary to allow the patient's leg to hang over the table so that the foot may be taken between the knees, in order to supply the required force by the thigh muscles. These motions are accompanied by the audible breaking of adhesions and the complete disappearance of the deformity.

In a limited number of cases it will be necessary to divide the tendo Achillis—when, for example, the range of dorsal flexion remains limited in spite of repeated stretching, or where there has been very great pain and tenderness at the medio-tarsal joint, and it is desired to remove the strain of the calf muscle completely. Traumatic cases come especially under this head. This tenotomy has one great advantage, that it lengthens the course of treatment and gives the patient the benefit of a longer rest and opportunity for after-treatment. When the passive range of motion has been regained, the foot is turned downward, then inward and upward into the position of extreme equino-varus, an exaggeration of the attitude of adduction. By this manipulation the os calcis is drawn under the astragalus and thrown into an everted position, and the scaphoid is flexed about and under the head of the astragalus, which is then lifted to the limit of normal flexion. The attempt is always made to bring the extreme outer border of the inverted foot up to a right-angle with the leg, which is the limit of normal forced flexion in this attitude. The foot, thickly padded with absorbent cotton, is then fixed in this club-foot position by plaster-of-paris bandages.

Surprisingly little discomfort, considering the force that it is sometimes necessary to apply, is experienced after the operation. The familiar and often intense pain from which the patient has suffered so long is entirely relieved by the correction of the deformity; there is often a sense of tension about the outer side of the ankle and dorsum of the foot, but this is not as a rule of long duration. As soon as possible, often on the following day, the patient is encouraged to stand and walk, bearing his weight on the foot. Walking serves two purposes—to still further over-correct the deformity, and to accustom the patient to a posture entirely different from that so long assumed.

Meanwhile the contracted tissues on the outer side become thoroughly overstretched, the weakened ligaments and muscles on the inner side are allowed to contract, and the local irritation rapidly subsides under the rest from the constant injury to which the foot has been subjected.

The patient is not confined to the bed or house; if both feet are in plaster bandages, crutches are of course necessary. The time that the feet should remain in the overcorrected position depends upon the duration of the deformity and the severity of the symptoms; that is, from one to six weeks, the usual time being about three weeks.

At the end of two weeks, or whenever the patient can support his weight on the plaster bandage without a sensation of discomfort, it is removed, the foot placed in the proper position, and a cast taken for the brace. Immediately after this is done, the foot is returned to the club-foot position and the plaster bandage reapplied. When the brace is ready the plaster bandage is finally removed; the foot is now in good position, and in many instances the arch is exaggerated in depth.

For the first few days, prolonged soaking in hot water, with subsequent massage at intervals during the day, will be found useful in overcoming the swelling and local tenderness that may remain. It is always insisted that a new shoe of the Waukenphast pattern shall be obtained, the sole and heel of which are raised a quarter of an inch on the inner side to aid in the balancing of the weak foot; the brace is then applied, and the patient is never allowed to walk without its support. When the shoe is removed he is instructed to walk on the outer side of the foot or the toes until

the foot again becomes strong; in other words, the deformity is never allowed to recur.

The systematic treatment is then begun by the surgeon and patient, the first essential being the attainment of free and painless passive motion in all directions. These motions, which have been so long restrained by deformity, cannot be regained without effort, and during this stage the treatment must be carried out by the surgeon himself; if he trusts to the patient or his friends, a cure is out of the question. A least once a day the full range of motion must be carried out to the normal limit.

Three motions—abduction, flexion, and extension—are usually free and painless; but the fourth, that of adduction, is almost invariably resisted by the same quality of muscular rigidity that was present before the operation. By far the most effective method of overcoming this resistance is conducted as follows: The patient is seated in a chair, and the surgeon stands in front of him. Let us suppose that the left foot is to be adducted—or, as the patients express it, twisted. The surgeon places the foot between his knees; his left hand encircles the heel, the fingers grasping the projecting os calcis and tendo Achillis; the ball of the palm lies against the medio-tarsal joint on the inner aspect of the foot; the right hand grasps the outer side of the forefoot and toes; then, by steady pressure of the thigh muscles, the forefoot is forced downward and inward over the fulcrum formed by the projecting palm which lies upon the left knee, the fingers holding the heel steadily in place. This inward twisting is at first resisted by a mixed voluntary and involuntary muscular spasm, which gradually gives way under steady pressure. When the limit of adduction has been reached, the foot is firmly held until all pain has subsided, when the patient is instructed to make voluntary movements while the foot is in the corrected position—flexion and extension of the toes, and to contract the flexor muscles of the foot. Finally he attempts to adduct the foot, the surgeon supplying the power, which in all cases of this type has been completely lost.

This passive manipulation to the extreme limit of normal adduction is necessary until there is no longer any sensation of pain or tension, for as long as there is the slightest spasm or painful restriction, so long is the voluntary motion limited, cure delayed, and relapse of deformity probable.

During active treatment the patient, by the use of massage, active and passive motion, is constantly working to one end—namely, to regain the lost power of voluntary adduction.

The time necessary to rest the feet, to overcome the local inflammation and muscular spasm, and to regain, in part at least, the range of passive motion, to place the patient in the same position as regards a cure as that of the milder type of deformity, is from three to six weeks.

Usually the patients are told that a month will be necessary and that at the end of that time they may return to work, free from pain and from the danger of relapse, and that the feet will constantly grow stronger under the work which was before too great for their strength. The time necessary to re-educate the adductor muscles in their proper function depends in great degree upon the intelligence and persistence of the patient. Although in after-treatment massage and special exercises are of benefit, the essentials are very simple: an effective brace, a proper shoe, and the passive manipulation which has been described, until its object has been attained; the proper walk, the best and easiest of exercises; and lastly, to force into the patient's understanding the method of protecting the weak foot by the alternation of strain and by proper postures.

The author gives a brief analysis of 1000 cases of so-called flat foot. In fifty eight cases the cause of the disability appeared to be injury, and in sixty-five it was apparently due to rheumatism or rheumatoid arthritis. The symptoms usually appeared first in one foot, and, as a rule, were at all times more marked on one side.

In 569 instances the duration of symptoms was recorded, being six months or less in 409.

The age of the patients is of interest as bearing on the question of prognosis: 426 were between ten and twenty years of age, and 780 were less than thirty.

The philosophy of this theory of the cause and cure of the weak foot may be again briefly outlined:

The normal foot may be made to assume an attitude resembling that of the so-called flat foot.

The deformity of flat foot is a permanent exaggeration of a normal attitude; it follows, then, that the habitual assumption of the simulating posture predisposes to deformity.

This passive attitude that simulates deformity may be simply the result of habit, but, on the other hand, it must be assumed

if the mechanism is weak or overburdened, or if leverage causes pain, or if normal motion is in any way restricted.

Weakness may be prevented by guarding the foot from injury and improper use. Deformity may be cured by the removal of obstructions to normal use, by protecting the foot during the period of weakness, and by restoring the normal balance between the work to be performed and the ability of the mechanism.

THE TREATMENT OF SENILE DYSURIA BY BILATERAL LIGATURE AND DIVISION OF THE VASA DEFERENTIA.

ISNARDI (*Therap. Woch.*, No. 21, 1896) in 1894 first performed the operation of bilateral ligature and exsection on the vasa deferentia to relieve the suffering of a patient complaining of retention of urine. The same year another patient was thus operated upon, and both recovered completely. Since this period he has performed the same operation in twelve other cases.

The first one, a man of sixty-eight, suffered from dysuria for three years, and for a long time with incontinence. Testicles were of normal size; prostate enlarged to the size of a small apple; bladder distended. The operation was performed on the 25th of June. Six days later the trickling of urine entirely ceased, the contents of the bladder being evacuated voluntarily every hour. Distention had disappeared. About two weeks later he could hold his water for four hours, the stream being delivered with some force; the prostate was markedly atrophied. On the 17th of September the patient died of marasmus. At that time he was passing his water normally. The bladder was trabeculated and showed the remains of earlier submucous bleedings. The prostate was small, especially on the left side. Both testicles were atrophied.

The second patient, aged seventy-one, suffered from dysuria for eight years. There were false passages in the urethra from the very frequent use of catheters. He was straining and passing a few drops of urine every half-hour. The bladder could not be emptied. At the time of operation he had been suffering from septic fever for some days. The urine was sour, acid, and not markedly altered. Nine days after operation the patient could urinate spontaneously, and the residual urine was diminished by three-fourths. His fever vanished, catheter was no more required, and ultimately he passed urine three or four times a day normally.

The third patient was sixty-nine years old. For several years he had exhibited the symptoms of prostatic hypertrophy. Retention of four days' duration, not relievable by the catheter, had resulted in coma, with a Hippocratic expression. There was a varicocele on the left side, a hydrocele on the right. The right side of the prostate was hypertrophied, the left side atrophied, though the testicle of this side was enlarged. The right vas deferens was divided and ligated. A week after operation the catheter was readily passed. Twenty-three days later the patient died of apoplexy. There was no autopsy.

The fourth patient, aged fifty-five, had suffered for two years from dysuria, and serious nervous reflexes from the bladder and rectum. He had been twice operated on for hemorrhoids, and suddenly lost, after the last operation, the power of evacuating his bladder, being compelled after that time to use the catheter. He had suffered from cystitis, which was cured by instillations of nitrate of silver. He was afflicted with such violent and obstinate tenesmus that he seriously contemplated suicide. Four days after operation he passed a stream such as, according to the testimony of his wife, had not been observed for many years. The pain, however, was not relieved. He was compelled to use the catheter. Because of this he grew hopeless and committed suicide.

The next case was that of a man aged eighty, who had suffered from dysuria for several years, often complicated by complete retention. He used the catheter all of this time, often with difficulty, attacks of bleeding and fever being not uncommon. The day following operation the catheter was dispensed with and all the symptoms disappeared; he was able to hold his water three hours, but suffered from repeated and harassing tenesmus. He regained his health completely, and was able to empty the bladder with only slight burning. The operator hopes for improvement with time.

The sixth patient was sixty-four years old, suffering from serious disease of the heart and kidneys. For some years he had had symptoms of prostatic hypertrophy. Had been suffering for fourteen days from retention of urine. Catheterization was extremely difficult and caused bleeding. The case was further complicated by a false passage and suppurative cystitis. The latter grew worse after the use of permanent catheterization, and

patient developed an adynamic fever. The prostate was as large as a hen's egg. On the day of operation spontaneous micturition was possible, but was attended with some difficulty. Twenty-four hours after operation, acid urine was passed, free from pus. Five days later the patient died of his visceral disease; at this time he was able to urinate spontaneously.

The seventh case was a man seventy years old. Had been suffering from retention for a month or so, catheterizing two or three times a day without improvement. The urine contained pus. Testicles and prostate were small. Two days after operation the patient passed his water twice. The next five days urination was very frequent but the catheter was dispensed with. When he passed from observation, urination was at times frequent though for the most part performed in the normal manner.

The eighth case was a man of sixty-five years, who had suffered from symptoms of prostatic obstruction for many years. For some months past had been tortured day and night with tenesmus recurring every quarter of an hour. The prostate and testicles were of medium size. On the day after operation, micturition was easier and less frequent. Tenesmus completely disappeared and the patient felt generally improved. In two weeks the urine was absolutely normal.

The ninth patient was seventy-six years old. He had been suffering from prostatic hypertrophy for several years, frequently employing the catheter, which had caused epididymitis. The urine was ammoniacal. The passage of an instrument was extraordinarily painful and difficult. The patient was tortured day and night with vesical spasm. General health was poor. On the day of operation he passed voluntarily a large quantity of urine, and his pain disappeared as if by magic. Thirty hours after operation the urine was acid and contained very little pus; next day the pus was again abundant. He passed some urine spontaneously, but had to depend mostly upon the catheter. Examination of the urine showed hippuria as a sequel of nephritis, which ran a fatal course. He died about two weeks after operation.

The tenth case was a man, seventy years old. Had been suffering from complete retention for five years, cystitis for three months requiring the use of a catheter every half-hour. He left his bed three days after the operation, though a month later there was no change in his symptoms. Six weeks from operation the cystitis was cured. The patient used the catheter every three hours. The operation caused no improvement in the case.

The eleventh case was a man eighty-two years old. Had noticed trickling of urine for two years. There was a large hydrocele and prostatic enlargement on the left side. The day after operation the diurnal incontinence vanished. A month after operation the patient died from apoplexy. The last week of his life he had nocturnal or diurnal incontinence.

The twelfth case was eighty-two years old. For many years he had suffered from dysuria, for five months from retention, the bladder being greatly distended. Urine alkaline. General condition favorable. For a month the patient used the catheter twice a day with difficulty, often followed by bleeding. The prostate was enlarged on the right side. The day following the operation the introduction of the catheter was much easier; the second day he emptied the bladder spontaneously several times. Eleven days after the operation the patient died with senile marasmus. Autopsy showed a prostate the size of a hen's egg, and a soft testicle of gray color.

One of the patients, suffering from cancer of the prostate, committed suicide, and one died nine days after operation. Of the remaining eleven, in two the operation was unilateral and in nine bilateral. Eight of the eleven were cured of their dysuria, two were improved, and one was not improved. The results in this series of cases, the author holds, are extraordinarily gratifying. In all instances the ordinary means of relief had been tried in vain. Nothing was done for them in connection with the operation.

Guyon has reported three cases, with improvement in all. In two of these the prostate was made smaller, and in one was unaltered.

Bussachi also operated in three cases by resection, with improvement.

Routier reported five cases of ligature of the vasa deferentia, and spoke in great praise of the procedure.

Chabot operated upon one case in the manner to be presently described, and which was also employed by the author. He was gratified by a permanent cure. Two other cases were reported at the last Surgical Congress in Rome.

The author holds that the object to be attained by the operation is atrophy of the testes. Simple resection will not accomplish this, since the secretion may be poured out

into the connective tissue and thence absorbed. Ligation is no more successful, since the thick walls may prevent entire obliteration of the extremely narrow lumen. In one case, examined post-mortem, it was found that a bristle could be readily passed through the vas deferens at the point of ligature. In another case, in which ligature and division was successful, the operation was repeated; the distal end of the vas was found completely closed, but at the proximal end a bristle passed in freely, showing that here there had not been complete closure. This led the author in other cases, after cutting the canal and tying both stumps, to fasten the end of the lower stump in the angle of the lower wound, allowing it to project about one-fifth of an inch from the skin surface, thus insuring closure in scar-production.

In the first case, which died three months after operation, the testicle was carefully examined. Atrophy was visible microscopically. Often the testicle does not alter so much in size as it does in density. In other cases, coincident with diminution in size, nodules form in the epididymus much like those observed after gonorrhea. These alterations are much more marked in those cases which develop a marked inflammatory process of the whole cord.

The operation is thus performed by the reporter: An incision 1½ inches long is made near the top of the scrotum; the cord exposed; the pampiniform plexus and spermatic artery drawn to one side; the vas deferens laid bare for about 1½ inches of its length, tied in two portions, and cut between the knots. The upper stump is abandoned; the other is secured in the lower corner of the wound, so that it projects for about one-fifth of an inch, and an antiseptic bandage is applied. For the purpose of provoking inflammation of the entire cord, on the third day the entire wound is irritated to its bottom. This is repeated, and a large hard swelling appears, involving all the constituents of the cord. The vas deferens is found enlarged near the testicles, and the epididymus swollen and tender. In one case where, in spite of opening and teasing the wound, there was no inflammatory reaction, the author injected a one-per-cent. solution of nitrate of silver. When cases are complicated by large irreducible hernias, the vas is first found at its origin from the epididymus, is freed above at its more superficial portion, and is treated as already described. When operating alone, it being difficult to isolate the vas, a sharp needle is passed under it and then cut down upon. In the neighborhood of the vas are found many fibres of the sympathetic nerve; these should always be sought for and divided.

Obolensky has observed in animals complete atrophy of the testicle following division of the spermatic nerve just below the external ring. This nerve the author was often unable to find. He states that he is convinced, however, that this form of neurectomy in suitable cases should be attempted and may replace all other methods of operation.

As to the indications for section and ligation of the vasa deferentia, the author holds that it is to be preferred to complete castration, since the mortality is less, though this seems not proved. He states that death never results from the operation described, since narcosis is unnecessary. He holds that when a man is past sixty-five and suffers from prostatism, the passage of a catheter being difficult and painful, and marked tenesmus calling the patient up four and five times in the night, when there is cystitis which resists treatment or which if cured speedily relapses, it is much better to perform this simple operation than to subject the patient to the dangers of castration. And even when patients are willing for castration the operation on the vasa deferentia should first be tried. If this operation fails, the testicles can then be removed.

It is worthy of note that the reporter gives no credit to White, who has suggested this whole line of research.

NATURE AND TREATMENT OF MALIGNANT NEOPLASMS.

CARR (*Medical News*, Jan. 11, 1896), in an interesting contribution on this subject, protests against microscopic examination before operation, believing that the preliminary cutting of the tumor may cause a rapid change or an escape of cells that will infiltrate new tissues and perhaps be the cause of recurrence. There is no doubt that all these tumors should be removed without any cutting into them, without rough handling, pulling, or squeezing. All cases should be examined microscopically after removal, and recorded for future statistics. Could surgeons see microscopically all the small tumors they have thrown away without examination, there would probably be a vastly greater per cent. of malignant growths found among them than is generally supposed. It is also urged that these microscopic examinations be made with great care by a competent man, and that the

entire tumor be examined, for it often happens that tumors present very different appearances in their different parts.

There is little or no difference of opinion as to what should be done for distinctly malignant growths. Thorough removal is the only hope. In neoplasms of the breast the present operation of removing the pectoral muscles and axillary fat and glands is perhaps the best that we can do; but there are two distinctly different ways of performing this operation. The surgeon should begin with the axilla, so as not to force any cancerous material or cells from the axilla into the deeper tissues while manipulating the breast. Cut down to the axillary vessels, and tie all branches passing into the tissue to be removed. Remove the axillary contents in one mass by clean cutting with a sharp knife and without picking or pulling. In this way the axilla can be thoroughly cleaned in less time and with less danger of hemorrhage and of squeezing infecting cells into the tissues that are left. Extend the incision down over the tumor, including all diseased skin and a margin of at least an inch of healthy skin. Turn back the healthy skin on each side so as to expose all tissue to be removed, and then remove it in one piece by clean cutting.

The author cautions against any operation after a well marked cancerous cachexia has appeared or secondary growths have begun in internal organs, unless it be clearly understood by all concerned that it is only for palliative purposes. The undertaking of hopeless operations, as a rule, only brings surgery into discredit, and deters others from undergoing proper operations at the proper time.

THE TREATMENT OF SYPHILIS BY INJECTION OF SYPHILIS ANTITOXIN.

COTTEREL has used, in place of the serum of an immune animal, the serum of an individual who has gone through an attack of syphilis and has thus been rendered immune to subsequent attacks. From eighteen cases so treated, the following conclusions are drawn:

1. In the early stages of syphilis, *i.e.* when there is only a sore and glandular enlargement, injections of this serum cause the sore to heal rapidly; the adenitis in the groin generally becomes intensely marked; the skin and throat symptoms are absent, or only slightly marked.

2. Where the case is not seen until the rash and throat symptoms develop, the skin eruption fades rapidly, much more rapidly as a rule than under mercurial treatment, but the throat symptoms disappear rather slowly.

3. The general health improves.

4. The serum from an individual with well marked secondary syphilis appears to be more active than that obtained from a patient with tertiary symptoms.

The amount to be injected has not yet been accurately determined, but the author has used the serum in doses of one-half to five cubic centimeters.—*Medical Press and Circular.*

COLOTOMY FOR MEMBRANOUS COLITIS.

HALE WHITE and GOLDING BIRD reported before the Clinical Society of London (*La Médecine Moderne*, Jan. 7, 1896) a case of membranous colitis treated by right colotomy and subsequent closure of the wound. The patient, a young man of thirty years, began to have mucous rectal discharges, with constipation, in 1885. These symptoms grew more marked until 1891, when he began to experience violent abdominal pains. The next year the passages were often made up of blood and mucus, and the pain was almost unbearable. This condition continued until 1894, when tubular moulds were discharged. The pain was so severe and constant that he was kept in bed most of the time, and for the relief of obstinate constipation strong purgatives were required. In 1895 his condition was the same. There was marked tenderness over the ascending colon and sigmoid flexure. Dilatation of the lower bowel showed long tubular moulds mixed with blood and feces. Since he had been subjected to every form of treatment for ten years, including prolonged rest and thorough trial of various mineral waters, right colotomy was performed, the gut being secured in the wound on the 10th of May and opened on the 17th. Three days later the colon was irrigated with hot water from the artificial anus to the natural opening, but even during this time membranes had ceased to form. For five weeks all the passages escaped through the artificial anus, without requiring the administration of purgatives. The discharges were of normal fecal matter. At the end of this time, all the symptoms of which the patient previously complained having disappeared, the colotomy wound was closed and peristalsis was arrested by means of opium for a week. Compound liquorice powder was then given; the resulting passage contained neither mucus nor blood. Patient's general condition steadily improved, and on the 24th of July he de-

parted for the country, feeling much better than for many years, and not having had any blood or mucus in his stools from the period of operation.

The authors believe that in grave cases of membranous colitis such treatment is not only legitimate but extremely desirable, since thus the colon may be given absolute rest. It is true of this patient that he has since died, but apparently from causes not connected with the operation.

ADNEY stated he had seen this patient the last two days of his life, and at that time the symptoms were those of acute peritonitis. Rectal examination showed a swelling which he believed was a suppurating lymphatic gland, rupture of which he thought had caused general peritonitis. Patient stated he had not had any return of colitis.

Adney also reported the case of a woman who was suffering from severe dysentery. Left colotomy was performed with the idea of applying nitrate of silver or other suitable agents to the affected portion of the gut. The entire mucous surface was found covered with polypoid growths several inches in length. The patient grew better after operation, and died later from causes not connected with her dysentery.

BELANCE opened the ileum, securing the ends of the gut in the abdominal wound. The lower end he used as a means of applying lavages, which were made several times a day. The patient grew better at first, but died some days later of hypostatic pneumonia. In this case the ulcerated intestine readily absorbed toxic products, but was unable to fulfill any of the functions of normal mucous membrane. Hence nothing was gained by diverting the large intestine from the alimentary canal.

TURNER expressed the hope that this method would be employed in cases of ulcerative colitis.

THE TREATMENT OF SEPSIS BY INTRAVENOUS SERUM INJECTIONS.

BERLIN reported to the Société de Chirurgie the case of a woman who, three days after vaginal hysterectomy, showed such violent symptoms of sepsis that recovery seemed absolutely impossible. The belly was distended and painful, and there was very marked subnormal temperature and frequent vomiting. On the fourth day the patient seemed to be about dying, whereupon Berlin gave an intravenous injection of a little over a pint of artificial blood-serum, and shortly afterward repeated this injection, using not quite two pints. Marked cyanosis and increased gravity of symptoms followed at once, but shortly there was decided improvement and the patient recovered, being completely convalescent the twelfth day of her illness.

SEGOND stated that he had used injections of artificial serum for four years in all major operations, and had been able to save many cases of severe hemorrhage by this means. He also stated that in cases of severe sepsis these injections were potent.

MONOD had also had excellent results from intra-venous injections.

MICHAUX in severe hemorrhage and in cases of peritoneal sepsis had given intravenous injections of about three pints of serum, usually with excellent results. Sometimes immediately after the treatment serous fluid was vomited in large quantities.

TERRIER stated that it made no difference whether the serum was injected intravenously or subcutaneously, and held it was wise to combine such injections with blood-letting.—*Therapeutische Wochenschrift*, No. 21, 1896.

SOME RESULTS OF ANASTOMOSIS WITH THE MURPHY BUTTON.

RICHARDSON (*Boston Medical and Surgical Journal*, Jan. 9, 1896) reports three cases of lateral anastomosis by means of the Murphy button. After briefly discussing the advantages and disadvantages of this button, he states that when the patient's condition justifies a deliberate technique he prefers to dispense with all appliances except a needle and thread. He does not regard the application of Murphy's button as brilliantly successful.

His first case was one of cancerous stricture of the colon at the splenic flexure. The abdomen was opened for the relief of acute obstruction. The cecum was found intensely distended, the sigmoid flexure collapsed. Manual exploration showed an indefinite mass in the region of the splenic flexure of the colon, probably a cancerous stricture of the colon. The patient's condition was so alarming that no radical measure seemed justifiable. The cecum and sigmoid flexure were brought into apposition, and lateral anastomosis made by means of a Murphy button. The moment the cecum was incised for the insertion of one-half the button, there was a burst of gas and liquid feces which flooded the whole field of operation, running among the intestinal coils and into the pelvis.

The two halves of the button were applied so that the joint was not tight. This defect was remedied, after a fashion, by the application of a few sutures. Gauze drainage was employed, and good recovery followed. In two weeks there was a slight fecal discharge through the wound. The bowels began to move immediately and satisfactorily. The patient was up and able to attend to her duties in the course of a few weeks. The button was never found in the feces.

About five months later, symptoms of chronic obstruction developed. The abdomen was opened through the scar of the first incision, and under this the intestines were found firmly and densely adherent, not only to the scar itself, but to each other. The coils being separated sufficiently, exploration of the upper portion of the abdominal cavity and the region of the anastomosis was made. The button could not be felt; nor could the original disease which had been located in the splenic flexure of the colon. The cecum was moderately distended, the sigmoid flexure collapsed. No signs of an anastomosis, and no communication was supposed longer to exist, though the coils through which the anastomosis was made were not separated, and a small communication might have escaped notice. A second anastomosis was made near the site of the first. This time the operation was satisfactory and the joint perfect. Prompt recovery followed. The bowels moved freely and regularly, aided by cascara sagrada. The patient was discharged entirely relieved of her obstructive symptoms in a month. The button never appeared. She remained well for four months, when she was seized again with acute obstruction, causing death.

Autopsy showed both buttons free in the transverse colon. Both anastomoses were still patent. Cause of death was internal strangulation. Constriction of the colon was found at the position of the splenic flexure. This had narrowed the lumen of the tube to less than the size of a lead-pencil. Both anastomoses were abundantly large.

Richardson also reports the case of a man, aged sixty-three years, with cancerous stricture of the pylorus, symptoms dating back nine months. Anastomosis was made between the jejunum and the posterior wall of the stomach, the joint being perfect. The operation lasted about five minutes and was in every way satisfactory. The patient perished with symptoms of peritonitis six days after operation.

At autopsy the ring of gastric mucous membrane, compressed by the button, was necrotic; the gangrenous process had, moreover, extended into the stomach-wall. The gastric contents had escaped and caused a fatal peritonitis.

RECTAL ULCERS AND THE ELECTRO-CAUTERY.

BEACH (*Mathews' Medical Quarterly*, January, 1896), in an interesting article on this subject, states that the rational signs of rectal ulcers are: pain in loins, hips, thighs, and abdomen; morning diarrhea, especially in cases of tubercular ulcer; and not uncommonly nervousness and frequent micturition. It need hardly be mentioned that general emaciation follows in the train of symptoms. The diarrheal discharges contain muco-purulent material, occasionally blood, which appears in the first portion of the stool.

Patients presenting themselves with the ordinary symptoms — diarrhea, pain, etc.— have frequently baffled the skill of the practitioner who relied upon the internal administration of various drugs. But what once puzzled the enthusiastic therapeutist now stands forth in clear light, through his knowledge of pathology and approved methods, so that hope can be offered in the prognosis of many rectal lesions which were formerly hopeless. To arrest molecular death of the part is the first consideration, and cleanliness is above all to be desired. Rest is another factor of prime importance. To rest and cleanliness are added such measures as will restore the part *cito, cuto, et jucunde.* This applies to disease of the sigmoid as well.

The special object of the writer is to present the claims of the electro-cautery as a remedial agent in certain cases of rectal ulcer, and to this end he reports two selected cases.

The first had already been operated on twice by division of the sphincter, but without relief. On examination there was found an anal skin-tag beneath which was a marked irritable ulcer. The speculum was inserted, the cautery applied over the entire surface of the ulcer, and a furrow made over the long axis. Very little pain attended this application, and very slight soreness was felt the following day. Three such applications, made a week apart, resulted in complete recovery.

The second case was one of chronic ulcer of the bowel. The electro-cautery was applied to the ulcer twice a week for a month, then once a week for a month, resulting in cure.

THE RELATION OF PHTHISIS TO FISTULA IN ANO, AND THE RATIONAL TREATMENT OF THE LATTER.

GANT (*Mathews' Medical Quarterly*, January, 1896) holds that there are two varieties of tubercular fistula about the anus—one caused by the local deposit of tubercle bacilli in the rectum; the other non-tubercular but occurring because of the general debility of the patient. The tubercular fistula forms large, irregularly shaped external openings, with distinct cavities beneath. The finger passed into the bowel discovers a large angular opening within an inch and a half of the anus. Often the sinus is so large that the finger can be passed through it and into the bowel.

In patients whose lung trouble is so advanced that death is not far off, it is well to confine operation to simple dilatation of the opening to allow of free discharge and to relieve pain.

On the other hand, operation, preceded by hygienic toning up of the patient's strength, should be performed in all cases where tuberculosis is of a chronic nature. The author holds that chloroform should always be used as an anesthetic. The operation should be performed quickly, and every precaution taken against hemorrhage. Moreover, the sphincter muscle must be incised in but one place—at right-angles to the direction of the muscular fibres. The incision is followed by thorough curetting, trimming off all overhanging edges of diseased skin, and packing with iodoform gauze. In the after-treatment the patient is given as much sunshine and fresh air as possible, being out of bed in two or three days. It is not necessary to move the bowels more than once in three days; indeed, it is distinctly inadvisable to do so.

When patients are unable to stand an anesthetic, or are too feeble to survive the shock of operation, a ligature is serviceable. This does not confine the patient to bed at all. The operation consists in passing into the rectum and out through the anus a medium-sized rubber catheter (or solid piece of india-rubber) which has been threaded upon a probe, and tying here its free ends to prevent their slipping. In time the catheter cuts its way out, as a result of the uniform pressure. The advantages of this operation are: It does away with the knife; it can be done without an anesthetic; it is comparatively painless; it permits of the patient's spending all his time in the fresh air; lastly, there is no bleeding.

TREATMENT OF VULVAR ECZEMA.

LUTAUD (*Journ. de Méd. de Paris*, Jan. 12, 1896) holds that the seborrheic or impetiginous form of eczema is generally observed about the vulva. His general form of treatment is about as follows:

1. Absence of coffee, alcohol, wine, pork, shell-fish, lobsters, fish, ripe game, spices, old cheese, and the encouragement of diuresis by the employment of milk.

2. The employment of laxatives, podophyllin in the obese, rhubarb and senna in the thin.

The following powder is especially serviceable:

℞ Powdered sulphur,
Senna, of each, ʒ v;
Cream of tartar, ʒ iij;
Liquorice powder, ʒ iv;
Sugar, ʒ xxv.

A heaping coffeespoonful immediately before breakfast.

Thermal treatment is to be employed wherever practicable, patient being sent to proper springs, the author preferring Vittel, Contrexéville and Royat for the gouty, Vichy and Vals for those whose joints are especially involved.

When the vulva is irritated, only emollient preparations should be employed—bran-water, marshmallow or chamomile infusion; a little boric acid can be added to the boiled water and serve as a basis for these lotions. Following the lotion a cataplasm of corn starch or potato starch, made with hot boric water and applied cold, is indicated. The author especially recommends little compresses of tarlatan soaked in borated bran-water, to be placed between the lesser lips of the vulva. The dressing ought to be renewed after each urination. During the day borated cotton should be applied to the parts.

As a curative to be applied during the intervals between acute attacks, the following is suggested:

℞ Vaselin, 25 Gm.;
Oxide of zinc,
Starch, of each, 5 Gm.;
Salicylic acid, 5 Gm.

The parts having been previously bathed with borated bran-water and dried with cotton.

When the eczema becomes distinctly seborrheic in type, the following may be used after each urination:

℞ Carbolic acid, 0.25 Gm.;
Balsam of Peru, 2 Gm.;
Oil of sweet almonds, 100 Gm.

In the seborrheic forms the mercurial

preparations are especially serviceable; for instance:

℞ Terpeth mineral, 1 Gm.;
Vaselin, 30 Gm.

It is useful after each application of the ointment, and also after each dressing, to dust the vulva with an inert powder.

Baths should be used with moderation, and should not be too long continued or too hot. The author prefers a prolonged sitz-bath in the morning and evening, employing borated bran-water.

MALIGNANT TUMOR DEVELOPING IN AN ECTOPIC TESTICLE.

VILLAR (*Journ. de Méd. de Bordeaux*, Jan. 12, 1896) reports the case of a man aged twenty-eight, suffering from congenital inguinal ectopia. For two years the retained testicle had been increasing in size, without giving pain at first, though later there were various reflex pains. At the time the patient entered the hospital the tumor was about the size of a turkey's egg, hard, with soft areas, dull on percussion, and non-translucent. Pressure on its lowest portion gave rise to a testicular pain. No adenopathy could be perceived on deep palpation. The tumor could scarcely be a fibroma, since Hugier, Tillaux, Labbe and Remy have shown that parietal fibromata are often placed in the lower abdominal wall and are attached by a pedicle to the anterior superior iliac spine and to the crural arch, and are hence termed peri-pelvic fibromata; they originate and are placed above Poupart's ligament, are nearly always found in women, and are fixed by the muscular contractures of the belly-walls. In this case such fixation could not be established, nor could the pedicle be felt. Tubercular testicle was excluded on the ground that in two years it would attain less size, that there was no sign of tuberculosis elsewhere, and that this disease attacking an ectopic testicle is excessively rare. As to syphilis of the testicle, there could be found, so far as the tumor was concerned, none of the characters of this disease. Lymphadenoma was eliminated because two essential characteristics were lacking, *i.e.* bilaterality and the existence in some other part of the body of some lymphadenomatous nodules.

A CONTRIBUTION TO THE STUDY OF ALBUMINURIA.

REGINALD HARRISON (London *Lancet*, Jan. 4, 1896) calls attention to some points connected with tension of the kidney relative to albuminuria, and its treatment by surgical means. The kidney may be said to be a highly organized gland surrounded by a thin though fibrous capsule, and divided up into departments or sections by barriers of a similar tissue. It is capable of distention to almost any degree by a gradual force acting from within—as, for instance, the retrograde pressure proceeding from strictures which oppose the escape of its secretion,—but from the nature of its structural constituents is incapable of adapting itself to sudden emergencies of this kind.

Is the exudation of albumin from the kidneys the result of structural damage directly occasioned, as might occur as the result of nephritis or renal congestion? And are the degenerative changes subsequently noticed in the chronic forms of these affections consequent upon the damage thus inflicted on the organ? The author quotes Sir T. Grainger Stewart to the effect that "Albuminuria is very often due to changes of an inflammatory character in the epithelium of the tubules and in the stroma of the organ, and in a very large proportion of the cases in which it occurs in practice it is dependent upon this cause." That the changes which take place as a consequence of nephritis by the substitution of a lower for a higher excretory tissue, as we see in the cirrhosed forms of Bright's disease, are due to the damage the organ has received in the active and initial stage of congestion, seems by no means improbable. Sir Thomas Watson, in his Lectures, observed that "the stress or congestion which befalls the kidney in cases of febrile anasarca may set on foot a morbid process that long works silently and unobserved, but at last declares its operation by symptoms."

Since the more general adoption of direct exploration of the kidney through an incision in the loin or otherwise, a certain proportion of cases have failed to reveal any obvious cause for the symptom or symptoms which led to the adoption of the proceeding. It has, however, been frequently noticed that such cases were often completely and permanently cured by what was done. Amongst others Professor Annandale was one of the first to draw attention to this fact. A few examples of this kind, occurring at varying intervals during a somewhat lengthy experience of the writer's, has led him to believe that there may be other explanations than those hitherto offered. He regrets that only scanty notes were kept at the time of some

of his cases, arising from the fact that, in the absence of what was sought for, the existing conditions were insufficiently appreciated, while the results appeared either unexplainable or were referred to local states, such as the accidental fixation of a loose kidney, the division of a disordered nerve, or the moral effects of an operation. Further, he has frequently drawn attention at the time of exploration to the varying states of tension the kidney presented in different individuals: in one case this would resemble the resistance of a ripe plum, while in another the organ was flaccid and unresisting on pressure with the finger. Yet these differences were not always explainable.

In the early days of renal surgery he cut down on the kidney from the loin in a youth aged eighteen, expecting to find a suppurating focus either within or around the organ. The patient was suspected to have had scarlet fever three weeks before, and had in the meantime suffered intense lumbar pain; he had had a slight rash, some desquamation, a sore throat, and albuminous urine with casts. Harrison undertook the operation with some hesitation, and limited his incision so as just to enable him to put his finger on the kidney. This felt so tense that he extended the incision and opened it with confidence, expecting to find matter. This was not the case, and he closed the wound with the feeling that he had made an error in diagnosis. There was a full discharge of blood and urine from the wound for some days. The wound was lightly plugged with lint and in the course of ten days or so healed soundly. After the incision was made, the excretion of urine became far more abundant, and the albumin gradually and completely disappeared.

In 1887 he operated upon a man aged fifty years, who by the nature of his occupation spent a large part of his time underground. Occasionally he suffered from hematuria in conjunction with colicky pains about the groins, and he came to the conclusion that he was suffering from renal calculus. As, however, the symptoms were neither urgent nor confined to one kidney, the consideration of operation was postponed. In the course of a few months after Harrison first saw him, and while he was continuing his work underground, the urine became largely and constantly albuminous and there was some pain referred to the right loin. The Doctor took him into the Royal Infirmary at Liverpool, and explored the right kidney, which was found to be enlarged and tense. An incision an inch in length was made through the cortex, and the pelvis was explored with the finger, but after careful examination no stone could be found. There was a considerable discharge of blood and urine, which continued for a fortnight or so, a drainage-tube being retained in the wound; on the withdrawal of the latter, healing followed and the urine became quite normal. He heard some time afterwards that the patient remained in excellent health and was able to resume his ordinary occupation.

Another case came under his observation in 1893—that of a woman, forty-four years of age, who had suffered from slight hematuria at times for a year previously; occasionally the urine was albuminous. Shortly after he saw her she had a severe attack of influenza, which was followed by an aggravation of her renal symptoms. She complained of pain on pressure over the left kidney, and the albumin not only increased in quantity but was constantly present in the urine. As she believed she had passed a small calculus some months previously, Harrison thought it a proper case for exploration, and this was accordingly made. The left kidney was found to be swollen and very tense. It was opened and explored with the finger, but no calculus could be discovered. There was a free drain of urine with some blood, which continued for about a fortnight, when the wound closed. The patient is now quite well and the urine normal.

Looking at the three cases he has briefly related, he believes the first was scarlatinal nephritis, the second nephritis from exposure to cold and damp, and the last subacute nephritis following most probably upon influenza. Among other features, each case was characterized by the presence of albumin in the urine, which he is inclined to attribute to inflammation or its immediate effects. We do not sufficiently recognize the intense degree of vascular and tubular infarction that attends some grades of nephritis. Some years ago he saw a girl seven years of age who was suffering from scarlet fever of a malignant type; almost complete suppression of urine was the leading feature in the case, and death took place in four days from the commencement of the illness; at the necropsy the kidneys were found to be so highly congested that he was not surprised at their being unable to excrete. At the time the thought occurred to him that an incision into them appeared to be the only means that might have been effectual in restoring their function.

In a recent paper on "Scarlatinal Nephritis and its Varieties," Dr. Meadows Turner remarks: "Out of the 5109 cases, fifty-five died with nephritis, either alone or complicated with other lesions. This number includes those who presented some symptoms during life, as well as some others in whom after death extensive disorganization of the kidney was found, though during life there were no sufficient symptoms for diagnosing such a complication."

That inflammation attended with exudation, but not necessarily with suppuration, is sufficient to destroy the functional power of an organ, is evidenced in the case of the testes, where ability to procreate is sometimes lost by synchronous or successive attacks of epididymitis on the two sides. The late Mr. Henry Smith, in connection with this subject, not only showed that the progress of this disease might be curtailed and pain removed, but that the function of the organ might be preserved by a limited division of the investing tunic. In this way, he urged, the disastrous effects of tension on the organ might be averted. Harrison has frequently availed himself of this practice with advantage.

A few words may be added as to the nature of the operation which might be appropriate in cases of suspected kidney tension, and as to the time and occasion of its application. It may be stated as being that usually adopted for the exploration of the kidney with the finger by way of a small transverse lumbar incision. The surgeon will then be able to judge from the feel of the organ as to whether it is desirable to open it. If the indications are not clear, the wound on being closed by sutures usually heals by first intention. At all events, no risk is incurred. In the second place, the operation should, of course, be reserved for cases where there is evidence that the recuperative power of kidneys suffering from nephritis is overweighted. Where after an attack of this kind the albumin is not disappearing from the urine, and there is a prospect, unless some relief is found, of permanently damaged kidneys resulting, then a trial of this expedient may be undertaken without adding to the gravity of the circumstances. In what time all traces of a nephritis, either acute or subacute, should have disappeared from the urine before the surgeon is called in, is rather a point for the physician to determine. That many cases of nephritis with high tension and subsequent structural deterioration must necessarily be attended with cardiac hypertrophy or enlarged powers of circulation, is at once obvious. Diminished capacity to excrete can only be compensated for by increase in the rapidity of the blood-current. In the restoration of function we have the only safeguard against the development of this complication.

THE SURGICAL TREATMENT OF CERTAIN FORMS OF BRONCHOCELE.

The thyroid enlargements which Dr. Shepherd considers suitable for operative treatment are the cystic and the colloid forms, the latter being usually encapsulated. The method he adopts is enucleation of the growth, which he has successfully performed in sixteen cases without a death. The single cysts are the simplest cases. Sometimes the cyst-wall is so thin and friable that it cannot be enucleated, but requires to be picked out piece by piece, usually giving rise to abundant hemorrhage from the veins.

The reasons leading to operation have been difficulty of swallowing and of breathing; unsightliness; and rapid increase in size, causing pain and discomfort. Occasionally the growth gave rise to no symptoms except nervousness, yet after removal the general health improved greatly.

Dr. Shepherd prefers ether as an anesthetic, and considers the fear of the congestion of the vessels by its use only a bugbear.

He describes in detail the operation he practices, and some of the difficulties to be overcome. After enucleation of the cyst, and the securing of all bleeding points, he packs the cavity with iodoform gauze, allowing the end of the strip of gauze to protrude through the lower angle of the wound. He sutures the skin-wound with sterilized horse-hair sutures. Healing is extremely rapid, the patient being allowed up on the second day, and usually leaving the hospital about the eighth day after operation.

Dr. Shepherd gives a detailed account of his sixteen cases, with a report of microscopical examination of many of the tumors.—*Medical Chronicle*, October, 1895.

THE ANTISEPTIC PROPERTIES OF IZAL.

Prof. Sheridan Delepine has investigated the disinfectant and germicidal qualities of this drug. He has worked with it in connection with four types of pathogenic bacteria, viz., tubercle bacillus, colon bacillus, *Staphylococcus pyogenes aureus*, and anthrax spores, and forms the general conclusion

"that izal diluted with 100 or even 200 parts of water is a powerful and reliable antiseptic when contact of a sufficient length of time is secured. As an antiseptic it is more powerful than carbolic acid, and, if it be remembered that it causes very little irritation of living tissues, that in moderate doses it is not poisonous, and that, practically speaking, it is not volatile, there can be little doubt as to the immense advantages which it possesses over carbolic acid in many directions." Izal can be freely administered internally, can be used over extensive wounds, or injected under the skin without bad effects; it does not damage instruments. Fresh tuberculous products of great virulence (*e.g.*, from a cheesy lymph-gland), when mixed with about an equal quantity of izal (1:10 of water), and allowed to dry at ordinary temperature for twelve hours, are completely disinfected. Diluted with 200 parts of water, izal is a safe germicide for the *Bacillus coli communis* or less resistant organisms; diluted in 100 parts of water, it is a reliable antiseptic in wound treatment, as tested by its action upon the *Staphylococcus pyogenes aureus;* on the growth of anthrax spores, izal has a remarkable inhibitory power.—*Medical Chronicle*, September, 1895.

INFANTILE INTUSSUSCEPTION.

WIGGIN (*Medical Record*, Jan. 18, 1896), in reporting two cases of intussusception, has made a statistical study of the results from the treatment of this affection by intestinal distention or laparotomy. He has collected in all 103 cases, fifty of which occurred during the fourth, fifth, and sixth months. Eighty-nine per cent. were of the ileo-cecal variety. Two cases were cured by sloughing, and thirty-nine were treated only by means of inflation or enemata, or both, and sixteen of these, or forty-one per cent., recovered. In one case, while the enema was being administered under chloroform narcosis, and in the inverted position, the infant vomited, inspired the vomited material, and died. Seventy-two cases in all were treated by intestinal distention; some of these required laparotomy; failure to effect reduction occurred in seventy-five per cent. If it is desired to treat a case of infantile intussusception by means of intestinal distention, at least 1½ pints of tepid saline solution should be placed in the reservoir, which is not to be elevated above three feet; and if this is not successful after one trial, the method should be abandoned and other means employed. Laparotomy, performed sixty-four times by the author, resulted successfully in twenty-one, or 32 8 per cent. of the cases operated on; the average age of these infants was about 6½ months. In seventeen of the cases inflation or enemata, or both, had previously been tried without success. In eight cases the invaginated bowel was readily reduced; in ten cases it was reduced with difficulty. The mortality of laparotomy is 67.2 per cent. If we count only the operations, successful and unsuccessful, that have been performed since the technique of general surgery has become generally known, say since 1889, and throwing out as before the cases in which the operation has not been completed, the bowel incised or excised, we have a total of eighteen cases, of which fourteen were successful and four were unsuccessful, giving a still lower percentage of mortality, or 22.2 per cent., which the writer believes is a fair estimate of the risk to-day of abdominal section performed on a young infant for the relief of this disorder, provided the operation is performed within forty-eight hours of the onset.

In case it should be impossible to reduce the intussusception, Maunsell's method is advocated. This is performed by slitting the intussuscipiens and making gentle traction on the intussusceptum until its neck appears outside the opening in the intussuscipiens; the base is then transfixed with two straight needles armed with horse-hair, and the intussusceptum is amputated a quarter of an inch above the needles, leaving a fair stump beyond them; the sutures are now passed through the invaginated bowel, caught up in the interior of the bowel, divided and tied; the invagination is reduced, and the longitudinal slit is closed.

THE TREATMENT OF SYPHILIS BY HYPODERMIC INJECTIONS OF MERCURY.

EDWARD MARTIN and H. KIERSTED (*Philadelphia Polyclinic*, Jan. 4, 1896) report nine cases treated in this manner, from which they draw the following general conclusions, which they state they would not venture to do from so small a number of cases did the results not accord well with results of much more extended trial elsewhere.

As a routine practice, the treatment of syphilis by the hypodermic injection of either soluble or insoluble preparations of mercury is not more efficient than other and commoner means of administering the drug, and occa-

sions so much pain that it is impracticable. This pain may be slight and transitory or almost intolerable in its intensity, entirely incapacitating the patient for work for days at a time. There is no certain way of avoiding its infliction, and it may suddenly become manifest in patients who have taken many previous hypodermic injections without complaining.

By the observance of the simplest antiseptic precautions, abscess may certainly be avoided.

Before beginning hypodermic injections of mercury in the treatment of syphilis, the practitioner should invariably assure himself that the kidneys are not diseased, since practically all fatal cases of salivation—and there have been many in this treatment—have occurred in the persons of those suffering from kidney disease, hence unable apparently to eliminate the drug. When insoluble preparations are employed, the site of injection should be noted with particular care, so that in case of beginning symptoms of salivation an incision may immediately be made through the seat of such injection and any unabsorbed mercury may be cleared out.

In cases especially calling for an immediate mercuric impression, hypodermic medication should be the method of choice, supplemented by inunctions.

THE BURIED TENDON SUTURE.

At the last meeting of the Southern Surgical and Gynecological Association, held in Washington, Dr. H. O. MARCY of Boston read an instructive paper upon the history of the buried animal suture and the best methods for its preservation and use. Since Dr. Marcy was the first to suggest the employment of buried sutures and demonstrate their value, his contribution upon the subject is of more than ordinary importance. His first contribution upon the buried catgut suture was published in 1870. In 1880 he substituted tendon for catgut, as in every way superior, and in many articles has called the attention of the profession to the importance of its general adoption.

Dr. Marcy stated that the defect of catgut is inherent in its structure, and it cannot be rendered satisfactory by any method of preparation. "The connective-tissue sheath of the intestine of the sheep from which catgut is manufactured has its ultimate fibres disposed in an oblique direction, crossing diagonally. This serves the physiological purpose of foreshortening and distention as well as strength. The violin string (catgut of commerce) is not unlike a very thin piece of tissue silk which has been cut diagonally and then twisted. This would make a very imperfect fish-line, and the comparison is not overdrawn. When dry, the gut is strong, but when wet it is flat, elastic, and slippery. Chromicizing only partially remedies this defect, and sterilization by any process cannot correct the damage which the intercellular cement substance has sustained from bacterial infection, and the maceration to which, in preparation, the catgut is necessarily subjected."

Properly prepared tendon not only escapes these injuries, but has an entirely different ultimate structure. The connective-tissue cells are disposed parallel to each other and are the strongest structures of the animal economy. Of equal weight, carefully selected tendon will sustain a tension equal to that of silver wire. Tendons taken from the freshly killed animal are quickly sun-dried, and kept dry until their final preparation. Soaked in a 1:1000 mercuric solution until supple, the tendons are carefully cleaned, assorted, and dried between sterilized towels. They are then chromicized until of a dark golden-yellow color, and preserved in sterilized linseed oil to which one-tenth part of the crystals of carbolic acid has been added.

Sutures thus prepared improve with age. When desired for use, they are soaked in a 1:1000 solution of bichloride of mercury until supple. Preservation in absolute alcohol, boiling in it under pressure, boiling in oil of caraway seed—indeed, preparation by any of the many methods suggested for the sterilization of catgut—tend only to injure the inherent structure of tendon, and are not to be commended.

The tendons from the tail of the smaller varieties of the kangaroo furnish by far the most valuable suture material yet found. The anatomical construction of the psoas muscles of the rat, squirrel and opossum is not unlike that of the kangaroo; each fasciculus has its independent tendon extending the entire length of the tail. The tendons of these smaller animals are too short and too fine for general use, those from the large kangaroo too large. The latter when subdivided fray and are less valuable.

Dr. Marcy reported that from various sources kangaroo tendons were very defective. One lot of 300 lbs., collected for him, was almost entirely from the large kangaroo, and so undesirable that he refused to accept

it. This lot found its way into the American market, and is being distributed to the profession. Selected tendon should be furnished, all prepared, at $10 per hundred, although it is usually sold at a much higher price.

Dr. Marcy, in closing his paper, expresses the belief that all aseptic wounds, including even the larger amputations, should be closed in layers by buried tendon sutures without drainage. The edges of the skin should be coapted by means of a parallel continuous buried suture (subcuticular), and the wound sealed with iodoform collodion, strengthened by a few fibres of cotton.

The advantages of the buried sutures are, briefly, as follows: Aseptic, buried in aseptic wounds, they remain aseptic, and the repair is primary without inflammation, pain or suppuration. The iodoform-collodion seal renders subsequent infection impossible. No sutures are to be removed, and no other dressing is required. The tendon is absorbed so slowly that it may be traced in the tissues months after implantation, and ultimately it is replaced by a band of vitalized connective tissue which serves as a permanent reinforcement of the united structures.—*Boston Medical and Surgical Journal*, Dec. 5, 1895.

MODIFICATION OF THE DISTAL LIGATURE FOR ANEURISMAL DILATATION; A SUGGESTION.

HAYES (London *Lancet*, Oct. 12, 1895) states that the majority of hospital surgeons from time to time encounter cases of aneurism where, the possibility of dealing with the proximal portion of the diseased artery being out of the question, the problem of inducing coagulation within the sac, either by the Brasdor-Wardrop application of ligatures on its distal side or the extremely hazardous introduction through the sac-wall of foreign agents, must be considered. He has occasionally observed notable delay with regard to evidence of improvement after distal ligature, and in the case of a thin-walled aneurism such retardation may entail rupture of the tense, frail wall where otherwise cure would have been the result of operation. It occurs to him that thrombosis can be caused to extend from a distal point rapidly and safely to even a deeply situated aneurism by such a measure as the following:

The surgeon selects a favorable site for ligating the vessel or vessels on the distal side of the aneurism, and, in the event of there being two trunks for ligation, he determines which is to be doubly ligated and divided. Rough measurement of the distance between the aneurism and the point for double ligature with division of the artery, is now to be made, and a piece of sterilized catgut is to be cut, its length being sufficiently in excess of the measured interval. The arterial trunk having been exposed, a double aseptic silk ligature is passed beneath it, and the loop divided so as to leave cords with a space of, say, half an inch between them. The more distal ligature is now to be knotted and its ends removed, but the proximal ligature is to be only loosely tied with a single knot, which will serve merely to moderately compress the arterial walls. It will afford additional help and security if the artery needle be maintained in position beneath the vessel up to the time for tightening the proximal ligature. The next and distinctive step is this: A small opening is to be made into the lumen of the artery, midway between the ligatures, and through the aperture a slender cannula, occupied by nearly half the length of aseptic catgut already referred to, is to be introduced and directed towards the proximal or aneurismal portion of the vessel, until it shall have passed just within the part lightly compressed by the proximal ligature. The catgut is now to be gently pushed on through the cannula until the surgeon estimates that its free end will have reached, or perhaps entered, the aneurismal dilatation. The cannula is then to be withdrawn, and the proximal ligature to be firmly tied on the artery, corresponding to the distal end of the intra-arterial cord of catgut. Subsequently the artery and free part of the catgut are to be cut across at the site of aperture midway between the ligatures. The object attainable by introducing into the lumen of the vessel a bougie of catgut long enough to reach the sac can be readily understood: the foreign substance must soon become enveloped in a coating of fibrin, and, as it were, act as a gubernaculum for extension of the coagulating process within the aneurism; at the same time the sac-wall will not have been injured or weakened by any needle puncture, while risk of distant embolism will have been guarded against by the previous ligation of the trunk or trunks on the distal side. The question of danger from hemorrhage during puncture of the artery can easily be answered. The finger and artery needle, supplying points of pressure and counter-pressure, will afford absolute security while the opening is being made and the introduction of the cannula being effected. The cannula is well filled by

the catgut, so that when the proximal ligature is tightened on its tip little, if any, blood can escape through the instrument. Once a sufficient length of catgut has been introduced, the tip of the cannula is withdrawn and the encircling ligature made perfectly tight on the artery containing the clot-determining catgut.

It seems rational to infer that aneurisms that are otherwise beyond the reach of surgical treatment may, with at least comparative safety, have conducted to them thrombi capable of inducing cure by coagulation. Moreover, the catgut, being adapted for solution and absorption under the agency of leucocytes, will, after having effected its purpose, gradually disappear, and with it, in all probability, redundant blood-clot occupying the arterial lumen.

A CASE ILLUSTRATING A VERY EFFECTUAL METHOD OF TREATING EXTENSIVE MALIGNANT DISEASE OF THE BREAST.

LANE (London *Lancet*, Oct. 12, 1895) calls attention to the many cases of extensive cancer of the breast and of the superjacent or surrounding skin, associated with infection of the axillary glands and possibly also of those in the subclavian triangle, in which the surgeon must feel that if he could make a clean sweep of the whole disease he would be able to offer his patient a fair chance of subsequent freedom from recurrence, and in the immediate future much certain relief from pain and mental distress. The great difficulty he has to meet is the covering of a large and raw square surface whose sides may vary in length between eight and twelve inches. He also recognizes the risks of septic infection associated with such a large wound, its painful and tedious nature, and the fact that even if he succeeds in grafting such a large area the resulting scar is necessarily a most unsatisfactory one.

He states that since he has adopted the operative measures described in his previous paper—namely, removing the pectorals, carefully dissecting away every particle of glandular and areolar tissue from the axilla, and also, if necessary, dividing the clavicle and clearing out the subclavian triangle—he has found himself very well repaid for the extra time and trouble such an operation demands, and the very slight added risk from hemorrhage and a certain limitation of movement resulting from the removal of the pectorals more than compensated for by the subsequent increased duration of the patient's life. One comes across cases, however, in which the skin is so extensively infected that this last operation is unsatisfactory owing to the large raw surface which is necessarily left. In such cases he urges what would appear a heroic measure—amputation of the arm at the shoulder in order to obtain enough skin to cover the raw surface and to give a nice soft covering to the part. The patient will certainly die if she is not operated on, and in all human probability the arm will shortly become a source of distress to the sufferer owing to interference with the venous channels; therefore it is no great deprivation to remove it. Besides, it diminishes the risk of the operation, ensures immediate union, and within a very few days the patient is enabled to get about and enjoy an active existence.

The writer operated upon a woman twenty-nine years of age, on September 9, 1895, who was suffering from carcinoma of the right breast, which she had observed for the first time five months before. The mass was large and involved almost the entire breast. The skin was adherent over it and was ulcerated over a space as large as a five-shilling piece. All about the ulcer and for an area around the breast the skin presented minute nodules of infection. There were enlarged glands in the axilla, and in the subcutaneous tissue over the coracoid process a gland could be felt. It had apparently been infected from some cutaneous nodules just below it. Nothing could be felt in the liver, and the patient's general health and weight were as good as ever they were. The advantage of removing the arm, the possible benefits she would derive from it, and the risks she ran, were fully explained to her, and she insisted on undergoing the operation. An incision was made along the length of the clavicle to the middle line, and the middle third or more of the clavicle was exposed and removed. The subclavian artery and vein were tied at the margin of the scalenus anticus, and all the areolar tissue and glands in the subclavian triangle carefully dissected out. There was no obvious infection of these glands, but beneath the clavicle the upper limit of the enlarged axillary glands was defined and the glands were turned downwards. Great care was taken not to injure the supra-scapular or other vessels crossing the subclavian triangle. From the inner limit of the horizontal incision another was carried down vertically along the middle line for about nine

inches. It lay well outside the limit of skin infection. From its lower end another incision was carried backwards to the posterior fold of the axilla at what seemed a safe distance from the growth, and then it was run upwards along the posterior fold to the axilla, when it ran across the arm to the outer end of the clavicle. A vertical incision was made from the upper limit of the posterior axillary fold to the elbow, where it was crossed by a circular incision. The skin and subcutaneous tissue were dissected up off the deep fascia as far as the deltoid, out of which a large and sufficient flap was cut to ensure as much vascularity of the flap as possible. The inner part of the deltoid was removed and the limb disarticulated. The skin and all the subjacent soft parts were dissected off the sternum, clavicle, ribs, cartilages, intercostal muscles, serratus magnus, and posterior wall of the axilla, and the great square flap, which measured more than nine inches along each side, was fitted accurately and comfortably into the large exposed raw area. The part that corresponded to the circular incision around the arm was united to the edge of the median or sternal incision, while the edges of the vertical incision in the arm were connected to the upper and lower horizontal incisions in the thorax. Very little blood was lost during the operation. The growth was found to involve the greater pectoral, but the most careful subsequent examination of the part excised showed that the primary growth, the skin and glands were very freely removed. The patient ran the usual course of an aseptic wound, experiencing no discomfort or pain in the part.

The removal of a considerable portion of the clavicle enabled him not only to remove all glandular and areolar tissue beneath and about it and to tie the vessels securely and with a minimum loss of time, but it also allowed the scapula to fall into such a position as to give a greater length of flap and a less strain upon it than if the clavicle had been left intact.

Every operating surgeon of large experience is confronted too often with the results of very imperfect removal of the diseased structures, so much so that he sometimes cannot but think that the operator was influenced by a desire not so much to effect the thorough removal of the affected parts as to obtain a rapid recovery. It would seem obvious that such a course is not likely to reflect much credit on surgeons, and especially on operations for cancer of the breast.

TRAUMATIC HYDROCEPHALUS.

QUERVAIN (*Archiv für Klin. Chir.*, bd. 51, heft 3) states that traumatic hydrocephalus is caused by a partial or not entirely united fracture of the skull, the skin remaining uninjured. The fracture refuses to heal because the edges are not sufficiently approximated, being for instance driven in or separated by normal or abnormal intra-cephalic pressure; or union may be prevented because of interposition of the soft parts, such as the dura, periosteum, brain, clots of blood, or cerebro-spinal fluid, or because of disease of the osseous system—as, for instance, rickets or cretinism—or because of injury to the contents of the skull. There is always in these cases tearing of the dura and usually lacerations of the cortex extending as far as the lateral ventricle. The latter is opened either directly or subsequently by a process of traumatic porencephalus. Following the original injury the further course of the affection differs according to the health of the child. In healthy children the bony defect undergoes no change, or it gradually becomes more marked from pressure of the growing brain, eventuating in asymmetry of the skull; the edges of the defect are somewhat beveled by absorption, and the opening is finally closed by the formation of a more or less resistant membrane. In rachitic children a simple fissure can in a short time, as the result of absorption, become an extensive defect. This result can take place even though dura and periosteum are not detached. These membranes favor union and partially close the opening.

When a cephalo-hydrocele is developed spontaneous cure may result from diminished production of cerebro-spinal fluid, from lessening of the maximal pressure produced by crying, and retraction and increased strength of the covering aponeurosis, finally narrowing and obliteration of the communication within the interior of the skull.

The treatment in recent cases consists in elevation of any depressed portion of the skull, and bone-suture, taking all necessary precautions to avoid dangerous brain-pressure. Cases which are stationary or progressive may be treated by a complete and permanent reapposition; by a pressure dressing, thus favoring retraction of the aponeurosis; iodine injection, having for its object the same end and also tending to lessen the production of the liquid; ventricle drainage, especially in all cases complicated by epilepsy, also in rachitic cases and where the

bony defect is very great; finally plastic operation, as performed by König, is indicated where there is no epilepsy or rickets and where the bone defect is very marked.

As to prognosis, there is usually a spontaneous cephalo-hydrocele; the bony defect is not usually closed. There is always the danger of epilepsy and meningitis. Rickets always makes the prognosis more serious.

PULMONARY SURGERY.

Surgical procedures entailing operative measures upon the lung substance, including the larger bronchi, are still undertaken with a degree of caution easily explained, if we consider how inherently dangerous are the conditions that may necessitate operations in that region. It is safe to assert, as a matter of fact, that we will never be able to deal surgically with the lungs as we now do with many other organs and regions that were once forbidden ground.

Attempts at hemostasis in lungs widely exposed by large traumatisms to the chest-walls were among the first attempts at pulmonary surgery, and, with the aid of antisepsis, excellent results were obtained. Extirpation of tubercular apices was first performed quite a number of years ago, with problematical results, even when the patient survived the operation, but has now, and justly, been practically abandoned.

That pulmonary surgery is now making decided progress, however, must be conceded, for the number of operations upon the lungs reported in the medical press is steadily increasing, and a discussion upon this subject held at the Société de Chirurgie in Paris, November 6, 13, and 20, 1895, demonstrates that the accumulated experience of surgeons in this direction is assuming no little importance.

In hemorrhage within the pleura consequent upon punctured or incised wounds penetrating the pulmonary substance, the general opinion appears to be that if the bleeding does not cease spontaneously, after a reasonable delay it is proper, after ascertaining that the hemorrhage is not due to a lesion of the intercostal artery, to enlarge the wound if necessary, and seek the bleeding point within the substance of the lung and secure it. On the other hand, it seems useless to operate if there is any evidence that the bleeding has stopped, unless suppuration has occurred.

Dr. OUENU relates the case of a lad nineteen years old, in which a wound of the chest through the seventh intercostal space gave rise to copious effusion within the pleura. Tapping on two occasions, at a week's interval, gave issue to 600 grammes and 2000 grammes respectively of almost pure blood. As the general condition kept growing worse, a free incision was made, clots turned out, and the cavity was packed with iodoform gauze. This stopped the bleeding, and the cavity rapidly filled up, so that the lad was discharged a fortnight after the operation.

In this class of cases, however, the indications for operation, according to Dr. TUFFIER, are difficult to interpret, and this authority relates three cases of hemothorax, in all of which a strong rise of temperature appeared to indicate that the pleural contents were undergoing septic changes, and yet in which aspiration showed that such a process had not occurred. These cases were, therefore, not operated on; they recovered spontaneously.

Dr. Tuffier, in cases of operations on the lung, insists upon the necessity of detaching the parietal pleura whenever the lesion sought for is not at once found. In one instructive case of pulmonary gangrene this procedure allowed the operator to find a spot of induration of the lung that could not be discovered while the pleura still covered the organ. Incision released a large collection of pus. Washing out and drainage completed the operation, and the patient did well.

Somewhat analogous cases had been seen by several members of the Society.

Pyrexia *per se* does not seem to be a sufficient indication for operation, and the measure advocated by Dr. Tuffier, according to Dr. MICHAUX, should be reserved for cases in which pleuritic adhesions exist over the site of the lesion in the lung.

Dr. LUCAS-CHAMPIONNIERE thought we were often too hasty in operating in cases of hemothorax, which, as he thought, would in the majority of instances be relieved by simple immobilization, under the use of which the bleeding commonly stops.

In deep-seated abscess of the lung, it seemed to be the general opinion that detachment of the pleura would be useless if not dangerous, as the detached pleura might form a sacculation in which the evacuated pus would necessarily accumulate. A number of instances of evacuation of pulmonary abscesses by direct incision were given.

This very brief analysis of the results achieved by the French surgeons represents

very fairly, we believe, the practice adopted at the present time by leading surgeons the world over, and shows the limitations as well as the possibilities of pulmonary surgery. In a word, we are now able to arrest certain forms of pulmonary hemorrhage, to evacuate septic pleural contents, to remove foreign bodies, and to drain abscesses occurring within the substance of the lungs, in cases selected with great care, and it is questionable whether the next few years are destined to show much further progress in this department of surgical endeavor.—*International Journal of Surgery*, January, 1896.

ACUTE VAGINAL GONORRHEA.

H. C. Bloom, in the *Philadelphia Polyclinic* of January 25, 1896, advocates prompt and energetic treatment in this disease, to prevent future pelvic involvement. He advises immediate washings of the vagina and contiguous parts with solution of hydrogen dioxide, which seems to be the one agent that searches every fold and crevice, cleansing and putting them in condition for the next step, which consists in the thorough application of silver nitrate in solution (sixty grains to the ounce) over the entire surface. This is at once followed by the careful packing of the vagina with powdered boric acid, and the placing of a small soft wool tampon. The patient is requested to return in twenty-four hours, when the tampon and packing are carefully taken out, with probably a cast or exfoliation of the destroyed or infected tissue —if not as a whole, then in large flakes and sufficiently deep to destroy the gonococcus in the papillary layer of the mucosa. This practically cures the gonorrhea. A simple wound remains, and the next step is to wash this raw surface with a solution of mercuric chloride, 1:4000, following this by loosely packing the vagina with moist iodoform gauze, which is allowed to remain seventy-two hours. Upon its removal the surface will present a clean, healed appearance.

Reviews.

Infantile Mortality during Childbirth, and its Prevention. By A. Brothers, B.S., M.D. Philadelphia: P. Blakiston, Son & Co., 1896.

This is the William Furness Jenks prize essay of the College of Physicians of Philadelphia, awarded the prize by the Trustees of the Prize Fund during the last year. It covers nearly 200 pages, and the text is accompanied by copious bibliographies. The essay deals with the following topics: The Statistics of Infantile Mortality; the Morbid Anatomy and Etiology, as illustrated by 47 post-mortems; the Causes of Infantile Mortality, embracing maternal causes preceding labor, and both diathetic and infective diseases, and other maladies influencing the mother and fetus. There are also chapters on the maternal causes during labor, the mortality due to fetal causes before, during, and after labor, and the prevention of infantile mortality.

To those who are interested in this subject this essay will prove a valuable work of reference, for while the author does not take it upon himself to express positive personal opinions as to the methods which should be employed in the treatment of the mother and fetus or the new-born child, he presents in a clear and lucid manner the views of other authorities who have written largely upon this subject.

The Toxic Amblyopias: Their Classification, History, Symptoms, Pathology, and Treatment. By G. E. de Schweinitz, A.M., M.D. Illustrated. Philadelphia: Lea Bros. & Co., 1896.

This is an essay of nearly 250 pages to which was awarded the Alvarenga Prize of the College of Physicians of Philadelphia in October, 1894, and consists of ten chapters, with an appendix, which deal with the various drugs and other poisonous materials which cause amblyopia. In the Addendum the relation of hysteria to certain varieties of toxic amblyopia is considered.

Dr. de Schweinitz divides the poisons which produce amblyopia into two great classes. The first are those which directly affect the optic nerve; the second are those whose amblyoptic symptoms are unaccompanied by retinal or optic-nerve lesions. In the first class are the poisons which produce a chronic retro-bulbar neuritis and other forms of optic-nerve and retinal disease. In the second are those which produce mydriasis, myosis, or irregular eye symptoms. It is surprising to note how very many medicinal substances are on record as having produced untoward ocular manifestations. It goes without saying, however, that alcohol and tobacco, drugs which are largely abused as habits, are the most frequent causes of toxic amblyopia. Among other causes we note such drugs as iodoform, the coal-tar products, quinine and salicylic acid, and male-fern.

The illustrations, which are quite plentiful,

and which are in the form of plates as well as engravings, clearly illustrate the text, while copious bibliographies are found in the foot-notes of every chapter.

Although this essay deals with a very special subject, part of a specialty, it is one which possesses great interest to many general practitioners; and as this is by far the most exhaustive treatise upon the subject, it will undoubtedly become a classic both in ophthalmological and general medical literature.

The publishers have issued the book practically in the form of an *edition de luxe*, the binding, paper and printing being unusually handsome.

SYPHILIS IN THE MIDDLE AGES AND IN MODERN TIMES. By Dr. F. Buret. Translated from the French, with notes, by A. H. Ohmann-Dumesnil, M.D. Volumes II and III of "Syphilis To-day and among the Ancients."
Philadelphia: The F. A. Davis Company, 1895.

Buret, in his most interesting work, establishes apparently beyond controversy the fact that the first appearance of syphilis is lost in the mists of antiquity. The records of the Assyrians and the Babylonians contain proofs of the existence of the disease, and it is shown that it existed among the most ancient people of America. It is held that its frequency from a historical standpoint was dependent upon the degree of civilization, the disease in this respect resembling tuberculosis. Buret thoroughly refutes the doctrine of the American origin of syphilis, the epidemic which raged in Italy shortly after the discovery of America having been simply a coincidence dependent on the presence of the armies of several lands in that country.

This volume is a sequel to Syphilis in Ancient and Pre-historic Times, by the same author. Buret shows that the debauches of the Crusaders in the Eastern country were responsible for the violent outbreak of the disease which occurred after their return.

The book closes with a brief chapter on the Treatment and Prophylaxis of Syphilis, including under the latter caption public hygiene. It is thoroughly readable, and shows an immense patience of research.

URIC ACID AS A FACTOR IN THE CAUSATION OF DISEASE. By Alexander Haig, M.A., M.D., F.R.C.P. Third edition. Illustrated.
London: J. & A. Churchill, 1896.

Four years ago we published an enthusiastic review of this exceedingly interesting contribution to the study of uric acid by Dr. Alexander Haig. The present volume is very considerably enlarged over the first edition and contains not only the modifications which further research has made in Dr. Haig's opinions about this subject, but also additional information derived from new researches.

Dr. Haig still has the courage of his convictions that many of the symptoms and ailments which are put down to other causes are in reality due to uric acid, and while in some respects the theories upon which he bases some of his conclusions can with truth be severely criticised, yet after all it is by means of such enthusiasm and constant clinical research that the truth of this important matter is to be determined. Certainly some of his hypotheses concerning the causation of certain symptoms afford the most rational explanations that we can make to-day; and that the author's views appeal to the common sense of a large number of the medical profession is proved by the fact that his monograph upon this special subject has reached a third edition within four years. Probably the future will show that Dr. Haig is somewhat extreme in some of his views; but there can be no doubt, on the other hand, that much that he has told us will remain a distinct gain to our medical information. It will be remembered that among other conditions which he tells us are closely associated with uric acid as a cause are high arterial tension, epilepsy, paroxysmal hemoglobinuria, Bright's disease, diabetes, gout, and rheumatism.

THE PATHOLOGY AND SURGICAL TREATMENT OF TUMORS. By N. Senn, M.D., Ph.D., LL.D. Illustrated with 515 engravings, including full-page colored plates.
Philadelphia: W. B. Saunders, 1895.

This work, fittingly dedicated to the elder Gross, is a timely publication, since it takes up a detailed study of a class of diseases evidently on the increase, the treatment of which receives such vague notice in general surgical text-books that the practitioner is often at a loss as to the proper methods of procedure. An effort is made to found the whole teaching upon pathology, Senn holding that increase of volume caused by a tumor is due entirely to erratic cell-growth from a matrix of embryonal cells of congenital or post-natal origin. The classification is founded upon the origin of the tumors, and the microbian theory of etiology is disposed of shortly as not yet established.

The first portion of the book is devoted to general considerations. This is followed by detailed consideration of each class of tumors, with a section appended upon Retention Cysts.

In considering the general treatment of tumors the statement is made that no kind of general medication has any influence whatever in limiting tumor-growth. With this statement practically every surgeon will be in accord. The antitoxin treatment, as practiced by Coley, receives brief mention, since the author has had no success with it.

The various methods of cauterization, of compression and constriction, are described at length, but without endorsement. Perhaps the most forceful teaching in this section of the book is the italicized sentence which practically closes the chapter: "*In the removal of a malignant tumor, enucleation must never be attempted: the tumor must be excised.* Extirpation here means the removal not only of the tumor, but also of all infected tissues in its vicinity or in the same region. The knife or the scissors must be used from the beginning to the end of the operation. The extirpation of a carcinoma, unless the tumor involves a free surface and is recent and localized, must be followed by excision of the lymphatic glands of the same region, whether enlarged or not enlarged. The tumor and the string of lymphatic glands should be removed in one continuous piece by thorough and clean excision. It has been shown that carcinoma frequently selects the connective tissue as pathways for local infection; hence as much of the connective tissue as possible in the vicinity of the tumor should be included in the excision. Muscles are often divided or removed in operations for malignant tumors. Partial removal for malignant disease of organs not essential to life is bad surgery. In operating for malignant disease, parts and tissues must be removed regardless of the cosmetic result. The surgeon who operates with a view of securing a good cosmetic result is very liable to perform an incomplete operation. The primary indication in the extirpation of a malignant tumor is to remove all infected tissues; the cosmetic result is a secondary consideration, and can be improved immediately or later by plastic operation."

The author, after reviewing the classifications of Virchow, Cohnheim, and others, gives his own system, which seems a serviceable modification of those of his predecessors. In a special chapter on Carcinoma, he states that enlargement of the lymphatic glands in the region occupied by a non-ulcerating tumor, and without involvement of the glands in other regions, is almost positive proof of the carcinomatous nature of the tumor. This is a valuable point, usually learned only as the result of long experience.

He holds that "radical operation is indicated in all cases in which general infection has not occurred, and the primary and original tumors are of such size and extent and are so located as to enable their complete removal by an operation not immediately endangering the life of the patient, and leaving a wound which can be closed by suturing or which can be healed by a plastic operation or by skin-grafting, and the patient's strength is such as to warrant the operation,"

The operative procedures indicated for the removal of carcinoma in various regions of the body are given in detail, and for the most part the best methods are selected.

This work is worthy of its distinguished author. It is better than any of his previous books, and this is high praise. It is so clearly written and so lucid in its teachings, and moreover the authority of the writer is so great, that it should prove of incalculable benefit to the profession at large, and incidentally to the thousands of suffering patients who come to them for the diagnosis and treatment of tumors, unfortunately usually of a malignant type.

A PICTORIAL ATLAS OF SKIN DISEASES AND SYPHILITIC AFFECTIONS. In photo-lithochromes from models in the Museum of the Saint Louis Hospital, Paris. With explanatory woodcuts and text. By Ernest Besnier, A. Fournier, Tenneson, Hallopeau, Du Castel, Henri Feulard, Leon Jacquet. Edited and annotated by J. J. Pringle, M.B., F.R.C.P. Part II. Philadelphia: W. B. Saunders, 1895.

The contributors to this Atlas are so well known not only by specialists but by the general American practitioner, that their names on the title page of a book such as this assures the purchaser of its excellence.

Part II contains colored plates of lupus erythematosus, hypertrophic rosacea, circinate papulo-squamous syphilides, xanthoma planum et tuberosum, and numerous excellent woodcuts.

The colored plates (photo-lithochromes) are better than any that have heretofore appeared, with the exception perhaps of the water color illustrations published by Fox some years ago. This is in part due to the advances made in reproduction of pictures in color.

The text is extremely simple, avoiding pathological discussions, and giving simply the essential features of the disease illustrated. The work deserves unqualified praise.

Correspondence.

LONDON LETTER.

By St. Clair Thomson, M.D., Lond., F.R.C.S. Eng., M.R.C.P. Lond.

The University of Oxford has long been known as the place where German philosophies go when they die. It has lately roused itself from this condition of a sort of dead-house of learning to take an active part in the history of the spread of education. This activity, however, partakes of the crab-like method of progression—it goes backwards. Oxford has stirred itself not to further intellectual development, but to actively obstruct it. Cambridge has been showing the same kind of retrogressive tendency, although not of so vigorous a nature. Both universities are united in refusing their degrees to women; not their degrees in medicine—these latter, in fact, have not been asked for,—but the usual degree in Arts. This refusal in itself is bad enough, but the injustice of it becomes marked when the following is borne in mind. For over twenty years women have been permitted to offer themselves for examination at Cambridge, and during more recent years also at Oxford, and have been placed in the pass lists according to their merit; not infrequently they have secured high places in the honors lists. During all these years they have passed through the same curriculum as the men; they have passed the same tests, but have been refused degrees! All they ask for is the hall-mark to attest that they have qualified for the degree of B.A., and this the universities will not grant! These guardians of the nation's intelligence allow women to study, to go in for and pass examinations, but decline to give the stamp which a man carries away as evidence of exactly similar work. I need hardly repeat the old and crusted objections which have been trotted out once again; they would scarcely be listened to outside the venerable walls on the Isis or the Cam. One was that in a mixed class (if the women were admitted as members of the University to the same classes as the men, for at present they have to study in their own colleges and classes) the lecturer might be hampered so as to decrease the thoroughness of his teaching. To this it is only necessary to point out that women at Cambridge have been studying physiology for over twenty years, and that the two professors whose classes they attended were amongst those who signed the petition in favor of their being able to get degrees. The Principal of Durham University reported that such fears were wholly groundless, and that the presence of women in the classes had been distinctly beneficial. For not only Durham but all the other universities of England and Scotland have opened their doors to women. Indeed a comparison shows that on this question Oxford and Cambridge are not only the most backward of British universities, but also of the universities of Europe and America. Still, after all, it is their nature so to be. It is only recently that Roman Catholics and Dissenters have been allowed to study in their colleges, and at Oxford the medical faculty is practically non-existent. They resist all progress, and although always finally defeated by the spirit of the age, they have the notoriety of being the last to bow to it!

The vexed question of professional advertising is ever present with us. Lately it has been very much to the front, as the editor of the *British Medical Journal* has been mulcted in the sum of $750 in an action for damages brought against him by a provincial physician who considered himself libeled in some remarks commenting on his "professional conduct." Readers of the journal in question will have noticed that under the head-line of "Medico-legal and Medico-ethical" Mr. Ernest Hart, the editor, has been in the habit of giving utterance to oracular opinions on the conduct of A or B, in answer to the queries put by A's or B's colleagues. In January last a question appeared in the paper from "X. Y. Z.," asking whether it would be regarded as infamous conduct or censurable if he allowed his name to appear on the prospectus of a large hotel as its physician. In reply, the editor stated his opinion to be that such a course would be regarded as covert and unprofessional advertising, and would involve severe criticism and rebuke. Later on in January, under the heading "Hotel Physician," appeared an expression of opinion that "the medical man in question has not only disparaged the honorable traditions of the medical faculty, but contravened the well understood rule of modern practice. Need we add that so reprehensible a departure from the professional rule, in face, too, of the protesting dissent of the local practitioners, and in the absence, moreover, of our [self-] solicited opinion, the expression of which was unavoidably delayed for a week, is wholly incompatible with the honor and dignity of the profession, and justly subjects

him to professional reprobation?" *Hinc illæ lachrymæ!* There was no dispute that the plaintiff was the person referred to, and he won his case easily when Sir Dyce Duckworth —the big gun sent down from London to defend Mr. Hart's action—had to acknowledge that his own name, qualifications and address appeared on an insurance-company prospectus, which was widely circulated and hung up in hotels and other public institutions. The twelve good men and true in the jury box were no respecters of persons and failed to see why the provincial general practitioner should not get a certain amount of publicity without having it called "infamous conduct," if the big-wigs in London were allowed to parade in public with impunity. This trial shows the difficulty of laying down any hard and fast rules as to what is and what is not professional conduct; every man must be a law unto himself, for, as a witness said, "it is difficult to see where lamb ends and mutton begins." As there cannot apparently be any settled law, there must be confusion, but ill-feeling might be spared by a larger measure of tolerance in the professional breast and a recollection of Mrs. Poyser's philosophical reflection that "it takes all sorts of folks to make up a world." In the meantime it is clear that on the subject of professional etiquette the *British Medical Journal* will cease to play the part of Jupiter Tonans, and that "A" and "B" as well as "X. Y. Z." must settle their little jealousies and differences amongst themselves.

A paper war has been raging furiously amongst the laryngologists. The apple of discord was thrown upon the board by an article which inquired if such a condition as varicose veins at the base of the tongue really existed, and if they had any connection with throat troubles. In the ensuing correspondence it was made clear that according to some observers this condition occurred in one out of four patients, requiring the application of the galvano-cautery and the expenditure of time, pain, and money. Others as firmly held that dilated veins on the tongue rarely, if ever, cause symptoms or require local treatment. A heated controversy showed that the personal element was not wanting in this scientific discussion, while it was suggested that pecuniary considerations made the veins in question appear larger than they really were, or even produced a mirage of their forms when they did not exist at all!

More paper wars! And this time under the light shed by the cold stars of pure science, where neither the question of professional rivalry nor mercenary motives can bear influence, and yet with as much absence of dispassionate calmness as our country friends "A" and "B" or "X. Y. Z." show in their parochial bickerings. This war has centred round some communications to no less august a body than the Royal Society. Since the great discovery of Claude Bernard it has been generally held that the glycogenic function of the liver was an established fact. This view has always been opposed by Dr. Pavy, who holds that the liver is a sugar-destroying and not a sugar-forming organ, and he has recently reasserted these views in a work on "The Physiology of the Carbohydrates." These theories of Dr. Pavy have been criticised by Dr. Noel Paton, who considers that they rest on no substantial basis and have been refuted by so many investigators that they need no longer be considered. This drew from Dr. Pavy not an article, but an entire book, entitled "Epicriticism," which Dr. Paton could not let pass, and now the two champions of truth are having it out in the journals.

It has been pointed out as a little remarkable that at the present moment, at five of the large general hospitals, pupils of the late Sir William Fergusson are the senior surgeons. They are Christopher Heath (the President of the College of Surgeons), Rose, Lawson, Macnamara, and Barrow.

A query has been raised lately as to the influence of cycling on hemorrhoids. Dr. Oscar Jennings, of Paris, has answered, recommending the exercise most warmly—of course in moderation and in cases where there is no contra-indication—not only as a healthy exercise, but as in many cases actually curative of this condition. Dr. Jennings's book on Cycling and Health should be studied by all who are interested in the exercise which just now is so much in vogue. The book is in the second edition of its English translation, and I knew it more than ten years ago in its original French, before the wheel had become "all the rage" and when the author was looked upon as a pure crank for taking up a sport which in those days was left to "cads on castors."

A simple method of preventing large mammary abscesses has been published by Mr. Walter Spencer. He points out that hot fomentations, poultices, or belladonna plasters must all be a mistake, for all the secondary ducts must quickly be converted into abscess cavities unless the milk be first re-

moved. This is done by forcible expression, if necessary under nitrous oxide gas, although many patients can bear it without an anesthetic. Taking the breast in the hollow of the hands and increasing the pressure very gradually and as uniformly as possible, there first oozes from the nipple a few drops of whey, then a small plug of curd, followed by a stream of milk. From each duct a plug of curd has to be driven before the milk will come. Finally there issue streams of milk in many directions, as water from the rose of a gardener's watering-pot. Directly milk flows, tension is relieved, and further pressure does not cause so much pain. The amount of pressure required when the breast is so over-distended as in the cases alluded to indicates clearly that suction would have been quite inadequate, whilst the fact that each duct was plugged by curd showed why the milk was retained and how inevitable must have been decomposition and suppuration. Afterwards the women are ordered to foment and to squeeze the breast frequently and to take iodide of potassium for a few days.

The same principle is recommended by Brindeau (*Union Médicale*, Feb. 29, 1896), who points out that infection arises through excoriations of the nipples, from the hand of the patient, nurse, or doctor, or, most frequently, direct from the child, as its mouth is full of microbes. After recommending the above method of expression, he points out the importance of cleanliness, of washing out the child's mouth, and antiseptic treatment of the nipple.

Possibly the influence of heredity in incontinence of urine has been overlooked. A case has been recorded where an entire family had inherited this defect from their father. Not a single child was free from it—there were six of them,—although their ages varied from eighteen to five.

Those who might like to try the Nauheim system of baths in this country will be interested to hear that they can now be obtained at Bath. Cardiac cases are thus saved a long journey, and many will prefer a visit to Bath to a sojourn in a German *kurort*. Besides, the baths at Nauheim are given only in the summer, while the season at Bath is rather the spring and fall.

Attention has been called to the want of appreciation by the profession of the value of paraldehyde. It is said to be a wonderfully innocuous drug, easily tolerated, and an exceedingly effective calmative and hypnotic. It is of use also in epilepsy, and of great service in asthma or the asthmatic symptoms of morbus cordis, renal disease, and chronic bronchitis. By some observers it has been recommended in doses of fifteen minims; others prescribe a dose of thirty to sixty drops. A disagreeable feature of the drug is that it scents the breath strongly for twenty-four hours. A point in dispensing it is that the addition of a few drops of alcohol renders paraldehyde perfectly miscible with water; any flavoring tincture can be used for this purpose.

PARIS LETTER.

By Arthur Robert Turner, M.D. (Paris).

In a clinical lecture recently delivered at the Hôpital des Enfants Maladies, Dr. Marfan called attention to a condition often found in nursing infants, to which he gives the denomination of "gros ventre flasque," or "large flabby belly." It is a soft, depressible, spread-out belly—in short, a frog's belly. Percussion gives a dull tympanitic note, while palpation often gives rise to borborygmi but never reveals any induration.

The "large flabby belly" of infants, once formed, has a tendency to persist for years, even to the third and fourth year of life.

It seems to arise in children who have suffered from a series of attacks of chronic gastro-intestinal dyspepsia, revealing itself by alternations of diarrhea and constipation. During these attacks the abdomen is swollen, hard, and tympanitic, especially during the diarrhea. After a certain number of attacks the abdomen no longer diminishes in volume when an attack is over, but remains swollen, though all tension or tympanism vanishes.

Cachexia often accompanies this condition, and even death may ensue, in the latter case the abdomen diminishing in volume previous to the fatal event.

From pathological investigations Dr. Marfan concludes that the cause of the change in appearance of the abdomen following the chronic dyspepsia observed in infants is due to an abnormal lengthening of the intestine, and especially of the small intestine. He finds that while in normal infants under three months the intestine measures, on an average, six times the length of the child, in those who suffer from the peculiar form of abdomen which he describes it measures from eight and a half to ten times the length of the child.

Dr. Marfan wonders whether in such cases, even if the outer appearance subsides, the normal condition of the abdominal contents

is reëstablished, and whether certain dyspepsias of adult life or cases of enteroptosis may not date back to that period.

Some time ago one of the principal medical papers of Paris noted the fact that of 2922 physicians practicing in Paris, 521 were foreigners. This, combined with the crowding of the Faculty of Medicine of Paris, led the authorities here to refuse to receive any more foreign students into the Paris Medical School, requiring them to study at one of the Provincial faculties or schools. This measure, however, called forth protests from the French students, as not being severe enough. They claimed that they should be protected not only from overcrowding in Paris, but also from the future competition to which they would be exposed. They have likewise asserted that in many cases foreign students were allowed to enter the French faculties on presentation of diplomas which were by no means equivalent to the examinations in arts and sciences required in France. The Government accordingly has been considering the matter still further, and it is reported that before long the rules will be made so stringent that no foreigner will be allowed to study in France without having passed the classical and scientific examinations which are imposed upon the French student. It is said, however, that a certain diploma will be granted to foreigners not passing the preliminary examinations, with the important difference that it will not give the right to practice in France, but will merely show that the possessor has studied here and passed the medical examinations. It will be, in fact, "for exportation only."

Whatever may be the measures employed, it is probable that they will be rather rigidly applied.

At a recent meeting of the Société de Dermatologie et Syphiligraphie a case was presented which may be looked upon as unique. It is the first case known of soft chancre of the tongue. A patient presenting three typical soft chancres of prepuce, with bilateral adenitis, observed on the dorsum of his tongue, near the point, a small red painless fissure, of antero-posterior direction. Adenitis similar in character to that of the groin was to be found in the right submaxillary region. Ten days later the patient entered the St. Louis Hospital; the fissure had become an ulceration, rounded in form, from six to seven millimeters in diameter, and shallow, the border slightly elevated, red, non-indurated, and slightly detached, the bottom diphtheroid. The adenitis of both the groin and the submaxillary region terminated in suppuration.

Reinoculations gave typical soft chancres, and bacteriological examination, carried out by Dr. Sabouraud, whose work on Trichophyton is well known, revealed Ducrey's bacillus in the pus and Unna's bacillus in chains in the wall of the ulcer.

Messrs. Legueu and Lévy have obtained excellent results in the treatment of gonorrhea in man, from the use of Airol, a combination of dermatol and iodine.

They use the following emulsion:

℞ Airol, 2 Gm.;
Glycerin, 15 Gm.;
Water, 5 Gm.

The anterior urethra is first washed out, and then an injection of ten cubic centimeters of the above emulsion is made. A similar injection is given next day. It is claimed that a radical cure is obtained from three or four injections. The only inconvenience is a certain burning sensation following the injection, but this is not of long duration.

After having been long abandoned in France as a means of diagnosis in man, though extensively employed in veterinary surgery, tuberculin has recently been tried by two physicians of Montpellier, Messrs. Grasset and Vedel, for the early diagnosis of tuberculosis in man. In a communication recently made to the Academy of Medicine of Paris, they give an account of the results which they have obtained. In the first place they look upon the doses which have so far been employed as far too large. The dose which they recommend as sufficient for the purpose would seem to be from two to three tenths of a milligramme, injected for two or three days, morning and evening. The solution used must be freshly prepared, as it alters readily. It is made by adding to 200 cubic centimeters of boiled water 1 gramme of a solution containing one part of ordinary tuberculin to ten parts of a five-per-cent. carbolic-acid solution. Each cubic centimeter of the final preparation contains five-tenths of a milligramme of tuberculin. The patient is kept in bed for two or three days before the injection is made, the temperature being taken morning and night. After the injection has been given the temperature is taken as before, only more frequently. Fourteen cases were treated. In no case was any harmful result noted. In one case which was decidedly tuberculous no reaction was obtained, but in several other cases a reaction available for diagnostic purposes was present.

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Original Communications.

*ON THE HYPODERMIC USE OF IRON.**

BY J. M. DA COSTA, M.D., LL.D.

For some years I have used, in certain cases iron hypodermically. I have not employed it steadily, owing to the difficulty of finding a stable, non-irritating preparation. After many trials, I think I have obtained this in one of the newer compounds, the Ferrous Manganese Citrate, known also unofficinally as the Ferri et Mangani Citras. I will cite some cases in which it was employed, and which illustrate, at the same time, its mode of usage.

CASE I.—Thomas S., fifty-one years of age, a gardener by occupation, was admitted into the Men's Medical Ward of the Pennsylvania Hospital on November 11, 1895, complaining of general weakness, with spells of faintness during which consciousness remained. He had lost flesh, was anemic, and had cardiac dyspnea with palpitation after unusual exertion. An ulcer existed on the left leg just above the external malleolus. He declared himself to be temperate in the use of alcohol, and not to have smoked for fifteen years. Had typhoid fever when a young man. Venereal infection was denied; yet, about fifteen years ago, he had an erup-

* Read at the meeting of the College of Physicians of Philadelphia, April 1, 1896.

tion upon the chest-wall, anteriorly, and blood and pus came from the sores. Four years ago, blood streamed from his mouth; the hemorrhage was accompanied by nausea. Subsequently two similar attacks happened, less severe than the first, the last one occurring two years ago. After the hemorrhages his skin began to blanch; later, the pallor increased and he gradually became very weak.

On admission, the patient was seen to be a large man with a very pallid face; tongue pale and flabby; pupils normal; pulse 80, but with increased tension; temperature 98°; respiration 20. The whole region of the sternum, and on both sides of it, presented a mass of old cicatrices; the skin was closely attached to the sternum. The area of cardiac dullness was but slightly, if at all, increased; the apex beat in the fifth interspace, eight centimeters from midsternum. At the apex there was a rough systolic murmur, transmitted to the axillary region, and heard, though feebly, over the pulmonary orifice; no accentuation of the second sound existed. At the aortic cartilage a well marked systolic murmur was perceptible. In the cervical vessels a distinct, rough, systolic murmur was heard, and there was marked pulsation in the neck, especially upon the right side. The roughness of the murmur pointed to an organic origin. The lungs and the liver were normal; the spleen extended from the sixth interspace to the umbilicus (26½ cm.). The urine was acid, of specific gravity 1044, and contained neither albumin nor sugar; several pale granular casts and one epithelial cast, a few leucocytes, crystals of uric acid, and degenerated epithelium, were found. A blood-count showed red blood-corpuscles 2,184,000; white, 2666; the hemoglobin was nineteen per cent. The appetite was poor, and the bowels were constipated. The patellar tendon reflexes were absent, the biceps tendon jerk was diminished, and no ankle clonus existed.

November 21, the patient was placed on full diet with meat and green vegetables, and on tincture of chloride of iron, fifteen minims every third hour; but by December 3, though he was stronger and his general condition better, the heart murmurs were the same, and the blood, except for a slight increase of hemoglobin, was but little changed. December 5, a blood-examination demonstrated the red corpuscles to be 2,480,000, the white 2400, and the hemoglobin twenty-five per cent. A hypodermic injection of citrate of iron and manganese, of three grains, was ordered to be given daily.

December 11, temperature in the morning was normal, but in the afternoon, without any apparent reason, it rose suddenly to 104.6°. The general condition showed no alteration, nor was there any in the spleen or heart. The temperature reached 105.4°, and remained there for three hours, notwithstanding guaiacol externally and free cold sponging; it then fell steadily, and by the morning of the 13th was 98 6°. There were some râles at the base of the lungs, but no other changes.

On the 19th a blood-examination showed the red corpuscles to be 2,728,000; the hemoglobin twenty-five per cent. The hypodermics of iron had been resumed.

On the 23d it was noted that the spleen was rather tender on palpation; pressure caused pain. The heart condition was not changed, except that the murmurs seemed less harsh.

From the 1st of January, 1896, there was a steady improvement. On January 18 he was allowed to get out of bed; his color was much better, and he spoke of feeling much stronger. Strychnine sulphate, one-fortieth of a grain three times daily, was added to the treatment. On the 22d, the red blood-corpuscles were 4,680,000, the hemoglobin was fifty-five per cent., the color of the cheeks and lips was good; the patient said he felt well.

On February 7 the patient was going about the ward; he was beginning to look ruddy and to show a marked gain of flesh. The spleen, however, exhibited no decided change; its outline was from the sixth rib in the axillary line to the costal margin and thence to the umbilicus.

On February 22 the patient was discharged, after ninety-nine days in the hospital, feeling well and strong, and going back to work. The enlarged spleen remained, as did the cardiac murmurs. There was no obvious explanation of the sudden rise of temperature on December 11 and 12, and it was not repeated; it occurred some hours after a hypodermic, but seemed to have no connection with this. The temperature fluctuated generally between 98° and 100°, being usually about a degree, or a degree and a half, higher in the afternoon than in the morning. At no time did the hypodermics cause pain or local inflammation, and, save the strychnine late in the case, they constituted the entire treatment. They were given in the legs and in the arms, and, except at first and for a few days during and after the fever outbreak, were administered daily. Finding himself

steadily gaining, the patient became eager for their use. At first, only one hypodermic of three grains was every day resorted to; but towards the middle of the case two injections of three grains each were given daily, and, finally, two injections of five grains each. There was no sense of stimulation observed from the hypodermics.

CASE II.—In a second case of enlarged spleen, in a young man of twenty-one, the same preparation of iron was used hypodermically. The man was admitted to the Pennsylvania Hospital on December 12, 1895, with marked anemia connected with an enormously enlarged spleen, clearly of malarial origin. The spleen extended to the left inguinal region. The blood-count showed only 2,000,000 red corpuscles; the white blood-cells were 12,000 to the cubic centimeter; hemoglobin was thirty-four per cent. In this case also, marked improvement took place, though the treatment was not purely one by iron: quinine and ergot were also given. Nor was the iron used altogether hypodermically; it was at first, but as on one occasion a slight cellulitis without abscess followed, it was afterwards administered by the mouth. The injections never occasioned the least pain. The whole result of the treatment was very good. The blood condition strikingly improved. But, as in the preceding case, it is noteworthy that the spleen did not show a marked coincident diminution.

CASE III.—In a third case of anemia, also malarial, and aggravated by bleeding from the lower part of the bowel, the citrate of iron and manganese was also employed hypodermically in three-grain doses. It was given for fully a week, and never occasioned the least pain or disturbance. But, as the patient objected very much to the annoyance of any form of hypodermic medication, and as it was found that the remedy was well borne by the stomach, its hypodermic use was suspended. In this case, too, decided improvement occurred.

In every instance in which the iron was used subcutaneously, full antiseptic precaution was taken. In whatever part of the body the injection was made, the skin was first thoroughly cleaned; the needle and syringe were always well cleansed with alcohol. The preparation of the ferrous manganese citrate was that made by Merck. The solution prepared, after careful trials, by Mr. Taylor, our apothecary at the Pennsylvania Hospital, was a twenty-per-cent. solution, and was found to be clear and permanent by Dr. Nicholson, the Resident Physician, who used it extensively in the wards. The albuminate and peptonate of iron (Merck) made turbid mixtures that did not keep well. Mr. Taylor's directions for preparing the solution are: to powder the crystals in a mortar, and gradually dissolve them in hot distilled water, one grain of the crystals to five minims of water. The usual dose for an adult is fifteen minims, representing three grains of the compound salt.

Having now detailed the use of the form of iron to which I wish here to call attention, I may be permitted to offer some remarks on the hypodermic employment of iron in general. In passing, it may be observed, as was pointed out to me by Dr. Woodbury, that the whole practice of hypodermic medication originated by Alexander Wood making a small injection of chloride-of iron solution into a nævus, and conceiving the idea that this method might be employed for the introduction of narcotics in neuralgias. But iron administered subcutaneously for its constitutional effects has had so far a brief history.

Among the first published cases in which iron was used hypodermically was, I believe, the one reported from a clinic of mine at the Pennsylvania Hospital in February, 1878;* it was that of a young woman, very anemic, in whom dialyzed iron was employed. For some years previously, in instances not published, I had used both the ammonio-citrate of iron and the potassio-tartrate, and I have recently found that, about the same time, Huguenin† had employed the pyrophosphate of iron with citrate of ammonium, a form of iron officinal in the French Codex and the German Pharmacopœia and identical with that described in the U. S. Pharmacopœia of 1870 under the title of pyrophosphate of iron. Quincke‡ injected the citrate of iron, the ferrum citricum oxydatum, which, however, he gave up as causing too much pain. The results in my published case mentioned were good, but subsequent observations proved that dialyzed iron was at times irritating, and I abandoned it, and returned to the ammonio-citrate of iron, as in cases of gastric ulcer mentioned in various clinical lectures,§ at times also employing the pyrophosphate. Following up these observations, Lamadrid‖ reported some successful cases,

* *Medical Times* (Philadelphia), March 2, 1878, and *Medical and Surgical Reporter*, March 16, 1878.

† *Correspondenz-Blatt für Schweizer Aerzte*, vi, 1876.

‡ *Deutsches Archiv für Klin. Med.*, vol. 20, 1877.

§ *Hospital Gazette* (New York), 1879, and *College and Clinical Record*, Sept. 15, 1883.

‖ *Medical Record* (New York), July 6, 1878.

as did Luton,* whereas Kemp† noticed abscesses after the use of dialyzed iron. Since then a number of investigators have taken up the subject of subcutaneous injections of iron; especially has it been investigated by the physicians of Continental Europe. Ciamarelli, as quoted in Dujardin-Beaumetz's Clinical Therapeutics, also employed the ammonio-citrate, one grain to about fifteen drops of water. Dujardin-Beaumetz‡ himself used the peptonate subcutaneously, which he speaks of as painful, but as not being attended with grave local lesions. Neuss§ employed the pyrophosphate of iron with citrate of sodium, a form previously recommended by Rosenthal,‖ in six parts of distilled water, and essentially the same as the ferri pyrophosphas solubilis of our Pharmacopœia of 1890. Glaevecke¶ does not believe this to possess any advantages over citrate of iron, a preparation which, unlike the ammonio-citrate, Quincke,** as already stated, found to occasion pain and to be irritating. Losio†† details several cases of anemia cured by hypodermics of various salts of iron, and expresses the belief that iron thus introduced into the system acts more efficiently and promptly than when given by way of the digestive organs. A number of other Italian observers, such as Bompiani, Mori, and Magagni,‡‡ hold similar views. The latter recommends citrate of iron as well as the pyrophosphate citro-ammoniacal, and the pyrophosphate dissolved in distilled boiling water. The solutions ordinarily employed are ten-per-cent. solutions. Doenitz,§§ in Tokio, Japan, uses the solution of the sesquichloride of iron in albuminous water, especially in the anemia of beri-beri. Rummo‖‖ is partial to the same solution of the iron and ammonium citrate, as is Dori,¶¶ who uses no more than one grain of this daily. Chicandard*** employs the ammonio-ferrous sulphate because it is permanent and soluble; and, besides the form of pyrophosphate above mentioned, Rosenthal* has experimented with the peptonate and with the oleate of iron. Stockman† uses both the peptonate and the sodic citrate of iron. The lactate, and the sulphate, dissolved in alcohol, have been also tried.‡ Jaillet§ employs sublimated perchloride of iron with dry peptone dissolved in pure glycerin and distilled water, while Riva-Rocci,‖ from a recent experience of six years, gives the preference to the ammonio-citrate of iron, now more generally designated as the iron and ammonium citrate, given in doses of 0.05 to 0.30 gramme (¾ grain to 4½ grains). The testimony on the whole is most strongly in favor of this preparation. It is also the salt I prefer, with the single exception of the compound employed in the cases mentioned in this paper, and concerning which it may be a question in how far the manganese aids the iron.

A number of those who have used iron subcutaneously inject it into the back as occasioning less pain; Magagni prefers the nates.

The dose of iron for hypodermic use should not, to begin with, be more than one half of what is given by the mouth. It gets rapidly into the circulation. Rosenthal¶ injected 0.04 gramme of the pyrophosphate in solution into his own thigh, and thirty minutes afterwards found the iron present in the urine. The effect on the nervous system, of iron used subcutaneously, is described as a sense of strength and excitation,—in some cases, where large doses were given, amounting even to delirium; of this I have personally seen no instances, nor have I of the sneezing, the nausea and vomiting that are said to have occasionally followed its employment. Fever has been stated to sometimes happen; this may be due to general want of care in hypodermic medication; I am, from experience, unacquainted with its occurrence, if we except the doubtful instance in Case I.

Iron ought not to be used in the hypodermic form indiscriminately. It is mostly unnecessary to subject the patient to the annoyance of this form of medication; but where

* *Le Mouvement Médical*, No. 25, Paris, June, 1879.
† *Medical Record* (New York), June 15, 1878.
‡ Clinical Therapeutics. 1885.
§ *Zeitschrift für Klin. Med.*, bd. 3, 1881.
‖ *Wiener Med. Presse*, December, 1878.
¶ *Archiv für Exper. Path. und Pharmakol.*, bd. 17, 1883.
** *Deutsches Archiv für Klin. Med.*, bd. 20, 1877.
†† *Rivista Clinica di Bologna*, No. 5, 1887.
‡‡ *Il Raccoglitore Medico*, No. 18, vol. ix, 1890.
§§ *Berl. Klin. Woch.*, 1879, No. 36.
‖‖ Compendio de Terapia Clinica. Naples, 1886.
¶¶ *La Riforma Medica*, July 29, 1893.
*** *Lyon Méd.*, 1887, lvi, 12.

* Quoted in *Sajous' Annual*, 1892, vol. v, A-92.
† *British Medical Journal*, April 29, 1893.
‡ See H. Gillet: Formulaire des Médications Nouvelles (Paris, 1896), p. 97.
§ Étude Physiologique et Clinique sur la Chloro-peptonate de Fer. See also Dujardin-Beaumetz: Dictionnaire de Thérapeutique, Supplement (Paris, 1895), article "Fer," p. 341.
‖ Sixth Italian Congress of International Medicine, Rome; *Universal Medical Journal*, 1895, p. 366.
¶ *Wiener Med. Presse*, Dec. 1, 1878.

rapid action is needed, as after exhausting hemorrhages, or in anemic persons with delicate digestion who cannot assimilate iron by the stomach at all, or in gastric ulcer where it is desirable to prescribe iron, or when iron given by the mouth constipates excessively, or when a decided action on the nervous system is required, and one that shall be produced as promptly as possible, I think it is by far the most advantageous way of using it.

It has been claimed for iron thus introduced into the system, for instance by Rocci,* that it remains in the organism as an assimilable substance, producing hyperemia in various organs and tissues, favoring the absorption of edema in anemic patients, the destruction of old red blood-corpuscles, and the formation of new hematins. If this be true, the effect of hypodermic injections will be much more lasting than that following other forms of administration. Magagni* dwells upon the circumstance that when iron is thrown under the skin it acts directly upon the whole blood-forming apparatus, and not indirectly, as when introduced by the mouth; while Stockman* holds that it is stored up in the liver, from which it is slowly excreted into the blood. Be this as it may, it is certain that there is a field for iron used hypodermically that is not exhausted merely by instances in which it is more advisable, on account of poor digestion, to so give it; but, as with opium and other drugs, we may from hypodermic use get results not only speedier, but sometimes different from those obtained by the ordinary methods of administration.

THE TREATMENT OF PERNICIOUS ANEMIA.†

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Two years ago I had the honor of reading before the Society a paper on the "Nature, Diagnosis, and Treatment of Pernicious Anemia," and of alluding to certain cases that had come under my observation.‡ I wish now to add the experience of the last two years and to discuss further measures of treatment, especially that which has recently become popular—the administration of bone-marrow.

It seems necessary to me now, as it did two years ago, to consider, first of all, the cases which are to be classified as pernicious anemia, and to discuss the nature of the affection. There is little that I wish to add to what I said then regarding the nature of the disease. The weight of opinion has steadily moved toward a general acceptance of the view that pernicious anemia is a hemolytic disease. Aside from the fact that experimenters have produced anemic conditions in animals similar to the disease as it occurs in man, I would again allude to the pathological lesions discovered in the disease, and especially to the abundant deposits of pigment found in the liver, the spleen, and other organs; to the occurrence of icterus, and of pathological pigmentation of the urine; and to the less certainly significant discovery of peptonuria and excess of uric acid in the urine.

As far as the blood-making organs are concerned, the evidence points to inordinate activity rather than to diminished function. We may assume, therefore, that there is active hemolysis rather than faulty hemogenesis in this disease. In my previous discussion I held the view that while the disease was essentially hemolytic in nature, it might still be proper to speak of deficient hemogenesis in the sense that a certain amount of hemolysis would exercise no decided influence upon the condition of the blood in healthy persons, while in those of lowered blood-making power progressive deterioration of the blood would ensue. In proof of this view we may recall to mind the fact that similar diseases act most dissimilarly in different persons, and that while in one but a moderate anemia follows a gastro-intestinal or other disorder or a loss of blood by hemorrhage, in another there is extreme debility and deterioration of the blood. It may be argued that cases might occur in which the ordinary wear and tear of life, in a person of deficient hemogenetic power, would lead to the clinical picture of pernicious anemia. Such cases, however, do not seem to occur, as far as any observations now at hand would indicate. In all cases in which studies of the pathology of the disease have been made, there is evidence of active hemolysis. Therefore we are led to the belief that in all cases of pernicious anemia the condition of the blood results from active blood-destruction, which is either so decided that normal hemogenesis cannot cope with it, or which is decided enough to overbalance the deficient hemogenesis of the particular individual.

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* *Loc. cit.*

† Read before the Philadelphia County Medical Society, April 8, 1896.

‡ See Therapeutic Gazette for June, 1894.

The essence of the disease is, therefore, blood-destruction. The seat of this remains doubtful, though recent experiments and investigations have partially cleared the way for a fuller knowledge. The occurrence of hemoglobinemia, which is occasionally observed, and of icterus, which is an almost constant symptom, led at first to the assumption that there is in this disease, as well as in other diseases attended with so-called hematogenous jaundice, widespread blood-destruction in the general circulation. Recent investigations, however, leave no room for doubting that such jaundice can have only an hepatic origin. Experimenters are unanimous in the view that blood-destruction leading to the formation of hematoidin, bilirubin or hematoporphyrin and consequent jaundice, can have its final stage only within the liver. The preliminary separation of hemoglobin or hematin may occur in the general circulation or in any local part, as in the portal area, but the final change occurs in the liver. Whatever view we may hold as to the original seat of the hemolytic changes, we cannot deny the rôle of the liver as a contributing organ in the final changes brought about in the circulating blood.

Quincke, Mott, Peter, Hunter, Griffith and Burr, and others have investigated the pigment deposits found in pernicious anemia, and have in particular called attention to the iron-containing pigment of the liver and spleen. Hunter in some of his earlier studies found that there was evidence of blood-destruction in the spleen, the gastro-intestinal tract, and in the bone-marrow, and regarded the relative importance of these organs as falling in the order in which they are named. More recently he has inclined to the view that the spleen is the all important seat of hemolysis as far as pernicious anemia is concerned. This view, it seems to me, is a retrograde one, and based, as it largely is, upon the occurrence of large amounts of iron containing pigment in the spleen, rests upon uncertain ground. Pathologists have long maintained, and with apparent justification, that the spleen is a filtering organ, as are the lymphatic glands. The presence of abundant pigment, and particularly that in the lymphoid nodes where it is most abundant, might therefore readily occur in cases of blood-destruction taking place in any part of the circulation. This is well illustrated by the enlargement and pigmentation of the spleen occurring in experiments in which blood-destruction is brought about by injection of distilled water or direct transfusion of blood into the circulation. The existence of pigment in the spleen is, therefore, no indication that it originated there; neither is the presence of brownish coloring matter resembling hematoidin or bilirubin to be looked upon as of splenic origin.

On the other hand, there is evidence of a clinical kind that blood-destruction may have a gastro-intestinal origin. I need only allude to the constant anemia of diseases of this part of the body, to the occurrence of severe anemia in cases of gastric atrophy, in some cases of gastric cancer, ulcerations, etc., and to the clinical evidence that has been brought by those who favored the view of Sir Andrew Clark regarding the intestinal origin of chlorosis. I may further allude again to the cases of Sandoz, Jürgensen, Meyer, and others, in which severe anemia was rapidly cured by lavage or removal in other ways of bacteria and noxious agents of other kinds from the gastro-intestinal tract. It seems likely that the first stages in the process of hemolysis begin in the capillaries of the gastro-intestinal tract, and that the final change with formation of iron containing pigment occurs in the liver. That this pigment is not brought to the liver for the purpose of elimination with the bile (as would at first sight seem probable) is proved by the fact that the bile normally contains but a trace of iron. It is more probable, therefore, that the iron-pigment is formed in the liver and subsequently removed to parts where it may be utilized or excreted. The former purpose is probably carried out in the bone-marrow and spleen, the latter in the gastro-intestinal tract and to a very small extent in the kidneys.

I believe, then, that pernicious anemia is a hemolytic disease, in which hemogenesis may or may not be equal to the normal, though always insufficient to cope with the hemolysis; that this hemolysis is originated in the gastro-intestinal capillaries, and dependent upon poisons generated or at any rate absorbed from that tract; that the final splitting-up of the blood coloring matter occurs in the liver; and that the hemosiderin is subsequently removed to the spleen and bone-marrow (perhaps for purposes of hemogenesis) and to the intestines and kidneys (to be excreted).

As far as our knowledge of the disease extends to-day, it is but a symptomatic disorder of the blood, and not a disease in the strict sense. It matters not whether a cause is discovered or not; whether there be gastro-

intestinal lesions, parasites in the intestines, pregnancy or parturition, or no discoverable cause—the resulting condition of the blood, the symptoms, the course and tendency to fatal termination, and the general post-mortem lesions are the same; and I can therefore see no justification for setting apart a group of cases as true Addisonian pernicious anemia, and calling all those in which causes are found—severe secondary anemia. One set of cases is as progressive and as pernicious as the other; and the deduction seems obvious that the apparently causeless forms are such as have baffled our minuteness of examination or our methods. I have seen cases of pernicious anemia dependent upon or associated with gastric atrophy, gastric cancer, gastritis with polypoid growths, parturition, and anchylostomiasis (in this case the blood only), and have been unable to see differences of a characteristic kind from other cases in which the disease appeared wholly causeless. All cases of severe anemia—or, as it has been suggested to call such cases, of *cachemia*—in which maximum degrees of oligocythemia, with microcytosis, macrocytosis and poikilocytosis, occur, in which nucleated red corpuscles are discovered, and the hemoglobin is relatively excessive or at least approximately equal in percentage to that of the corpuscles—all such cases may be designated as pernicious anemia. In the treatment I believe it is wise and proper to regard all such as cases of hemolytic disease of gastro-intestinal origin.

TREATMENT may be divided into three heads: first, "specific" treatment; second, the treatment directed to alter the general conditions of the circulation; and third, treatment of the intestinal conditions or of underlying affections which influence unfavorably the progress of the case or perhaps act as the immediate causes of the disease.

The "specific" treatment of pernicious anemia consists in the use of three remedies —iron, arsenic, and bone-marrow,—and I shall consider them in this order, as it is the order in which they have been brought before the notice of the profession.

Iron.—The value of iron in anemia is unquestioned. It may be true, as Bunge and his pupils maintain, that only a comparatively small proportion of the iron administered becomes absorbed; but whether this is the case or not, clinical experience allows no question regarding the value of this drug in various anemic conditions. It is particularly valuable in cases of chlorosis and in the ordinary anemia of debility. Its use has been advocated in pernicious anemia, and in certain cases good results have been obtained. In most cases, however, iron is of little value, and I am positive that I have seen it contribute to the patient's discomfort and unfavorably influence the progress of the disease, when it was administered during the active stage of pernicious anemia. In convalescence it is a valuable remedy; and though the view of Stockman, that iron is practically a necessity at this stage, is probably too radical, there is no doubt that the combination of iron with arsenic or other treatment is most desirable during convalescence in this disease. It may be administered in the form of Blaud's pill, or as albuminate of iron, or in the form of one of the physiological preparations now in the market. The latter, I believe, have no special advantage over some of the inorganic preparations, excepting that they may be more acceptable to the stomach and not so constipating.

Arsenic was introduced by Isnard in 1865, but was more particularly commended by Byrom Bramwell, to whom the credit of its introduction is due. There is no doubt that in many cases of pernicious anemia this remedy is little short of a specific. It is to be recalled, however, that pernicious anemia, like other anemic diseases, is liable to curious and unexpected improvements, and Laache has pointed out that spontaneous recovery is occasionally met with. With the knowledge of these facts before us, however, we may assert that the remedy has really power to combat the progress of the disease and perhaps to effect a cure. Regarding the manner in which arsenic acts, little can be said. It may be that in some way it prevents intestinal putrefaction and thus limits the formation of the immediate cause of the disease; again, it may exercise a direct influence upon the corpuscles of the blood, increasing their resisting power; or, in the third place, it may increase the hemogenetic function. I am inclined to believe that it acts in some way to prevent blood-destruction and possibly at the same time to regulate the function of the bone-marrow and other blood-making organs. If it stimulated the latter without influencing blood-destruction, we might expect a sudden increase of nucleated corpuscles and other immature forms of erythrocytes after its administration, but such does not occur. There is a progressive tendency on the part of the blood to an assumption of a more healthy

appearance in size and shape and other features of the corpuscles; so that it would seem as if blood-destruction was progressing less rapidly and the hemogenetic organs were influenced to restore the normal blood-formation. This, however, is largely speculation, and perhaps after all unimportant. The clinical fact remains that this remedy influences favorably the course of the disease.

Whether the improvement is a permanent one or not cannot be positively asserted. Cases of apparent cure after intervals of three, five or more years have been reported; but on the other hand temporary improvement has been noted by Pye Smith, Mackenzie, Barrs, Russell, and others; while in many of the cases in which definite cure was supposed to have occurred, the patient has passed out of observation. My own experience would indicate that in many cases in which the patient has been apparently cured, the disease has in reality been only superficially influenced, as may be seen in the reports of some of the following cases, in which, though the patients presented a healthful appearance and believed themselves to be well, the blood-examination showed a continuance of the disease. Such cases are prone to recur, and Mackenzie has specially called attention to a form of relapsing pernicious anemia. In this form, I incline to believe, there has never been a definite cure, the intervals representing periods of apparent recovery, though blood-examination might have shown a continuance of the disease.

The administration of arsenic in this disease is a matter of considerable importance. In all cases it should go hand in hand with repeated examinations of the blood, and should be regulated by the response or tolerance of the patient. Sometimes improvement is at once apparent, and only moderate doses are required; in other cases excessive doses, even to the production of toxic symptoms, may fail to influence the course of the disease. Ordinarily Fowler's solution, administered by the mouth in doses of from five to twenty drops three times daily, proves sufficient. If the dose has been increased to twenty drops without noticeable change in the condition of the blood, great care should be exercised in the further increase of the dose. In particular it is to be remembered that gastro-intestinal disturbances may be provoked and may cause rapid loss of ground. Where this is feared, it is well to administer the remedy hypodermically. Five or ten minims of Fowler's solution, diluted with an equal quantity of water, may readily be administered in this way, and I have never found it specially irritating. Gastro-intestinal irritation may occur as in cases in which the remedy is given by the mouth; but this accident is less likely to occur. The results are sometimes quite striking, in contrast with the effects of the administration of like amounts by the mouth.

The following cases illustrate the value of the remedy in this disease, and at the same time illustrate the point which has been brought out above—that apparent cure does not imply real recovery, and that it is imperative to continue the treatment without interruption for a long time, perhaps for years, despite the most encouraging appearances.

CASE I.—A. T., aged sixty-three, single, presented herself at the Howard Hospital in June, 1895, giving the following history: She was a healthy girl and woman until five or six years ago, when she began to suffer pain in the chest, weakness, and disturbance of stomach. There was increasing flatulence; repeated vomiting, which finally became almost constant; appetite poor; frequent headaches; but the bowels remained regular. Her sleep became disturbed, and she grew more and more weak. About six months before admission she began to be pale and noticed that she was growing short of breath; cough became a distressing symptom, and so continued with pain in the chest.

On admission her eyesight was not good, and she complained of a feeling of pins-and-needles in her feet and ankles; brain and memory active; extreme weakness and pallor were noted, the color being yellowish; conjunctivæ somewhat icteric; feet swollen, and pitted on pressure; tongue coated; lungs healthy; heart-sounds very feeble, but no murmur; abdomen moderately distended and tympanitic; knee-jerks a little increased, but no loss of sensation. Examination of the blood showed 1,400,000 red corpuscles and forty per cent. hemoglobin. The stained preparation of the blood showed marked irregularity in the size of the red corpuscles and some irregularity in shape; there were nucleated red corpuscles, both small and large.

The patient was given Fowler's solution in ascending doses.

July 12, patient returned feeling much better; there was almost no swelling in the legs; appetite was good, but flatulence was still present and the tongue was coated; knee-

jerks still excessive, but sensory symptoms less prominent; lips becoming red. Red corpuscles 1,615,000, hemoglobin forty-five per cent. Examination of her eyes by Dr. Posey showed some evidences of old hemorrhages.

July 26, she had improved remarkably in every way, and felt that she was quite well. Red corpuscles 2,560,000, hemoglobin sixty-two per cent.

During August and September the patient was quite comfortable, but in the latter month she had an attack of bronchitis and relapsed. On October 8 she returned with fifty per cent. hemoglobin and 2,000,000 red corpuscles. She was again ordered to take arsenic, which lately she had neglected, and during November she improved considerably. In December she was careless of her medicine and was considerably exposed; so that by the end of the month she had again relapsed.

January, 1896, I saw her at her home, and found that she had acute lobar pneumonia, the base of the right lung being consolidated. There was considerable edema in the other parts of the lung. The arsenic treatment was continued vigorously, and strychnine and other stimulants administered. After three weeks she had practically recovered; and in March she was again in her normal condition, though still pallid and yellowish, short of breath on slight exertion, and troubled with slight cough. Her hemoglobin was forty-five per cent.

Case II was under the care of Dr. Geo. Woodward, with whom I saw her in August, 1894. The history was as follows: H. M., aged seventy-seven, born in England, came to America when fifty-three years old. She was married at twenty-one years, and bore twelve children; no miscarriages. Her previous health had been poor for a number of years, dating from an obscure illness. She had been asthmatic for twenty years. In 1890 her husband died; the loss greatly affected her, and her memory and general health began to fail. In 1891 she had a severe attack of grip, and in 1892 another. Since the latter date she had scarcely been well at all. She came under Dr. Woodward's care in April, 1894, with dyspeptic symptoms. She became profoundly anemic, and there was a murmur over the base of the heart; lungs normal; urine normal; pulse generally about 60; respirations 22. Her anemia and debility increased progressively, so that she was in bed the greater part of the day, and finally in July was entirely bed-ridden.

In August the following notes were made: "The patient is apparently well nourished, having lost little if anything in weight. Her skin is pallid—ofttimes yellowish; and the conjunctivæ are pearly blue. No arcus senilis. There is some edema of the ankles, and at times this becomes marked. There are discolorations of the skin along the tibiæ, and spots of ecchymosis on the forearms. The superficial vessels are not prominent. The pulse is 60, somewhat irregular and collapsing. The cardiac dullness is increased, and a double murmur is heard over the root of the aorta. Respirations 26 to 28, regular and sometimes asthmatic. There is no cough or expectoration. The voice is clear. Her stomach is easily disturbed; but the bowels are regular. The liver and spleen are of normal dimensions. There is no fever. Urine light-colored and normal. There has been no pain at any time, but the patient complains of numbness of the legs. The knee-jerk is present, though greatly lessened. The thyroid gland is enlarged."

Examination of the blood showed 2,000,000 red corpuscles and twenty-five per cent. of hemoglobin; the drop as it exuded from the finger was light-colored, and the clear plasma separated readily from the corpuscles. Examination of the stained preparation showed abundant megaloblasts and normoblasts, marked poikilocytosis, and irregularity in the size of the corpuscles.

Arsenic was administered in ascending doses by the mouth, and was continued with little interruption.

In October, 1894, I saw the patient again. She had been out of bed for some weeks and was apparently quite well. Her memory was still poor, but she considered her physical health normal. Examination of the blood, however, showed only 1,800,000 red corpuscles and sixty-five per cent. of hemoglobin. She was directed to continue the arsenic.

In February, 1896, I saw her for the third time. She had taken Fowler's solution almost without interruption since October, 1894. She now seemed quite well—in fact, more robust than most persons of her age, now over seventy-eight. There was still a cardiac murmur at the aortic region, systolic in time, and a less distinct diastolic murmur. The hemoglobin was between ninety-five and one hundred per cent. (The reading was probably a little high, as some congestion was produced to obtain the drop of blood.)

Bone-marrow was introduced as a remedy

in the treatment of pernicious anemia by Fraser, of Edinburgh, in 1894, and has since been used by a number of clinicians, who have reported variable results. The use of bone-marrow can scarcely be said to rest upon a scientific basis, and some have objected to it upon the ground that the bone-marrow is in nowise an organic secreting tissue, and that in consequence little good may be expected from its administration. It has been held that, as the formation of the blood with which the bone-marrow is concerned is a process of cell-multiplication rather than a secretion, the administration of extracts could scarcely be expected to give results. On the other hand it may be said that our knowledge regarding the function of the bone-marrow, and particularly its relation to the fluid elements of the blood and to the general metabolism, is so meagre that we are not permitted dogmatically to assert that it is void of action of a chemical sort, and the disproof or proof of the value of this remedy must therefore rest for the present upon clinical experiment rather than speculation. Fraser, Danforth, Drummond, Barrs, Hamilton and others have reported cases in which bone-marrow seemed a useful remedy, and I shall record below a case of which the same could be asserted. On the other hand, J. S. Billings Jr., Stockman and others have found it useless in a small number of cases, and I shall report a case in which the same observation was made. It may be said regarding the latter that the condition of the patient was extremely unfavorable when the remedy was first administered, and the surrounding conditions did not permit of the most accurate conduct of the treatment.

Some of those who have objected to the use of bone-marrow on theoretical grounds have sought to explain its occasionally apparent usefulness by the statement that it contains sufficient iron to prove beneficial in anemia. It would seem scarcely necessary to dispose of this view by accurate analysis, as the amount of bone-marrow administered has always been relatively small and therefore the amount of iron consumed in this way must be considerably below that taken with other food; but Stockman has taken the trouble to analyze the marrow. Taking the yellow marrow of three specimens from different animals, he found in one (26 Gm.) .001 Gm. of iron; in the second (20 Gm.), slightly less; and in the third (100 Gm.), .0025 Gm.; therefore an ounce of yellow marrow contains about one sixty-fifth of a grain of iron. In analyzing the red marrow of the calf, he found that 40 Gm. contained .0035 Gm. iron, and 26 Gm. contained .002 Gm.; or an ounce of the marrow contained about one-thirtieth of a grain of iron. This is sufficient to show that the marrow does not act by the iron contained.

Regarding the variability in action in different cases, while it must be admitted that the entire number reported has been insufficient to warrant positive conclusions, I have been inclined to believe that much depends upon the preparation of the marrow, and in one of my own cases a glycerin extract was employed without striking effect, while the raw bone-marrow acted immediately, to all appearances. It was the failure of the glycerin extract made from calves' ribs that led me to turn to raw bone-marrow. I had previously used the marrow plain, but had found that the patients soon rebelled and that the stomach became unretentive. I therefore looked for a more acceptable form, and found that by taking the red marrow of the tibia of the calf, mixing it with an equal quantity of glycerin, and rubbing these up in a mortar, a preparation could be made, the taste of which was pleasant, and which could be eaten upon bread without danger of disturbance of the stomach. The preparation may be made a little more fluid, by the addition of claret or port wine; but I prefer the simple glycerin "jam." From one to two ounces of it may be administered during the day. I have always been careful to get marrow which was quite red, as this is certainly the functionally active sort.

I shall now report two cases of advanced pernicious anemia in which this remedy was used. In the first, raw bone-marrow was employed for a short time, but not long enough to determine its value; later, arsenic with glycerin extract was given without notable effect; finally the marrow-jam was administered when the patient was almost moribund and when large doses of arsenic had been given continuously without any effect. Though the arsenic was continued in small doses at the same time, the immediate and striking improvement which occurred seemed fairly attributable to the bone-marrow. In a subsequent relapse bone-marrow was given again, but without effect.

In the second case the patient was far advanced when the treatment was begun, and the bone-marrow exercised no influence.

It is obvious that deductions cannot be

drawn from a single case of improvement or of failure. In the first case the sudden and striking improvement might have been coincidental, though the manner in which the stomach became retentive and the general conditions improved was most suggestive. The failure in the second case may have been due to the advanced stage of the disease, and certainly the conditions under which this patient was treated did not permit of the same accurate regulation and observation as in the first case.

CASE III.—H. S. B., aged thirty-nine. The patient's family history had no bearing on his case. He had been a strong, healthy man, working hard all his life. In 1886 he had malaria while living in Delaware. He was accustomed to the use of liquor and tobacco in excessive quantity. There was no venereal history. In 1891 he had an attack which was considered grip, and he asserts that he never entirely recovered from this. The fatal illness began in June, 1893. He had been working hard and drinking considerably, taking one glass of whiskey before breakfast every morning. He first had diarrhea and began to become pale, his strength failing and his memory growing poor. He became a patient of Dr. A. J. Bevan, with whom I saw him first in September, 1894; he was then extremely pallid and of a yellowish hue, puffy beneath the eyes and about the ankles; dyspnea was pronounced, and he complained of passing more than the normal quantity of urine and of being disturbed at night to empty the bladder. Examination showed his lungs to be normal. There was a systolic murmur at the pulmonary region, and less distinctly at the apex. Examination of the blood showed 1,150,000 red corpuscles and forty per cent. hemoglobin; there was no leucocytosis. The specimen of stained blood under the microscope showed typical microcytes, macrocytes, and nucleated red corpuscles. Poikilocytosis was not pronounced.

The patient was given large doses of arsenic, at times enough to produce toxic symptoms, and improved somewhat. Later he ate raw beef bone-marrow until he sickened. During this period there was considerable improvement in every way. He next took glycerin extract made from calves' ribs, together with arsenic, and continued to improve, though slowly. He was quite comfortable during the winter of 1894–95. In February, 1895, he sustained an injury and then had an attack of bronchitis, in consequence of which his condition became worse and in April 1895 he was again quite weak and had considerable dyspnea, his blood showing 1,000,000 red corpuscles and forty per cent. hemoglobin. He was treated with arsenic, but took his medicine irregularly and grew steadily worse.

In June, 1895, he was admitted to the Howard Hospital in an extremely weak condition. The blood showed 600,000 red corpuscles and twenty-five per cent. of hemoglobin. There was marked poikilocytosis, many large nucleated corpuscles, and some hemoglobinemia. He became wildly dilirious and had to be restrained in bed; his stomach refused every form of food. Arsenic had been given in large doses. Bone-marrow jam was now administered in doses of one, two, or three teaspoonfuls, four to five times daily, and was well retained. At once there was manifest improvement, and after a month the patient was seemingly as well as ever. The blood, however, showed only 1,500,000 red corpuscles and forty-five per cent. hemoglobin.

He left the hospital, refusing further treatment. His condition again grew serious in the autumn, and in December 1895 he stopped work. This attack was gradual in onset, the patient growing weaker and weaker. He entered the University Hospital January 8, 1896, presenting the characteristic features of marked pernicious anemia. His color was yellowish, the subcutaneous tissues were flabby, there was puffing beneath the eyes, and the vessels of the neck throbbed. There were venous and arterial murmurs. The heart was somewhat increased in size, and there were murmurs at the apex and base. The blood showed 1,100,000 red corpuscles, 3125 white corpuscles, and twenty per cent. hemoglobin; there were nucleated red corpuscles, microcytes, and macrocytes. The urine was light-colored, specific gravity 1.005, no albumin, no sugar. He was given the preparation of bone-marrow he had before received, but there was no improvement noticeable; on the contrary, his condition deteriorated from the first. For several days this was gradual, then a sudden change set in, and he died after a few days.

The autopsy showed characteristic changes of pernicious anemia—extreme fatty degeneration of the organs, violaceous color of the bone-marrow of the tibia.

CASE IV.—Mrs. B., aged about sixty, had been healthy the greater part of her life. In childhood she had measles, but no other illnesses. Was married at twenty-four and had

four children; there had never been any difficulty in or after any of her labors. She had had hemorrhoids when she was fifty, and had lost some blood now and then since that time. Her health was good until January, 1895, when her daughter noticed that she was growing mentally slow and somnolent, and she complained of numbness in the feet. Dr. A. J. Bevan was called, and found her pale and greatly weakened; dyspnea followed exertion, and several times she had slight syncopal attacks.

I saw her with Dr. Bevan somewhat later, and found the conditions noted. Her color was more yellow than white, and the conjunctivæ were yellow. She was mentally slow and apathetic, taking little interest in her surroundings.

The drop of blood as it flowed from the finger was extremely thin and presented the characteristic appearance of meat-washings. The red corpuscles numbered 1,142,000, and hemoglobin was twenty-five per cent. of the normal; no leucocytosis; corpuscles irregular in shape and size, and nucleated forms, both large and small, were present in rather considerable abundance.

The patient was put upon treatment with bone-marrow jam, but she steadily grew worse; arsenic was then given in conjunction, but despite the treatment she sank and died.

There was no autopsy.

It would be a grave error to suppose that the treatment of pernicious anemia was satisfactorily fulfilled by the administration of one of the "specific" remedies and the regulation of the ordinary details of hygiene. There are other and important indications, and at times I am sure that arsenic or bone-marrow would prove of little use unless auxiliary methods of treatment were instituted at the same time. First of all I believe it is necessary to regulate the circulation and to consider the quantity of blood. Much remains to be learned regarding the circulation of blood in the tissues, though we have learned enough to know that frequently there is stagnation of corpuscles, and that therefore but a part of the blood-corpuscles may be circulating and functionally active. It is of prime importance, therefore, in the treatment of a severe anemic disease such as the one under consideration, that all of the available corpuscles —none too many at best—be brought into the circulation and rendered useful. For this purpose massage is of great value. It has been pointed out by a number of observers that the corpuscles of the hand held in air number from five to ten or fifteen per cent. less per cubic millimeter of blood than do those of the toe or other dependent parts. In my own experiments in this direction I have found a uniform excess of from eight to ten per cent. in the blood of the toe, and practically a similar excess of hemoglobin. Recently J. K. Mitchell demonstrated the advantage of massage to equalize the circulation, and found the number of corpuscles to be thereby quite uniformly increased even in the most pronounced forms of anemia. It is therefore clear that in the treatment of pernicious anemia, rest in the horizontal position (which will favor the maximum effect for the cardiac action) and massage (which will return to the circulating blood and to usefulness a large proportion of corpuscles) are of considerable importance.

Next to these measures it is of importance to consider the question of quantitative anemia. Unfortunately there is no clinical method available for the determination of the quantity of blood; but the difficulty with which the blood flows from incisions, and the general desiccated condition of the patients in some cases, particularly towards the end of the disease, leave little doubt that reduction of the blood-mass plays some part in the pathology of the affection, though perhaps not so frequently as is the case in certain other forms of anemia. Near the end of the disease the patient's condition may be endangered by this reduction in the quantity of blood and the consequent failure of adequate circulation, more than by deterioration in the quality of the blood, and measures are called for which will increase the blood-mass. Injections of large quantities of water or of weak saline solution into the large bowel have the double advantage of stimulating peristalsis and thus of improving the general circulation, and perhaps at the same time removing from the system noxious substances, and also the greater advantage of supplying a certain amount of liquid to the empty vessels. In one case of pernicious anemia which has come under my observation, there was rapid and unmistakable improvement from the first administration of colonic douches; and while to an extent this improvement was ascribable to improvement in local conditions of the colon, to a large degree it was, I think, owing to absorption of liquid from the bowel.

In certain cases it may be of advantage to substitute for colonic injections hypodermic or intra-venous injections. The latter form

commends itself particularly in cases in which the circulation has become considerably enfeebled, and absorption of the water is therefore unlikely to occur speedily from the subcutaneous tissues or from the bowel. These methods of increasing the circulation by increasing the quantity of the circulating medium are, I believe, of incalculable advantage in many cases, and failure of arsenic at times is due to the fact that such measures have not been taken to increase the circulation and make the further action of the specific remedy possible.

Brackenridge, Von Ziemssen and others have recently advocated transfusion with defibrinated blood, but there seems little reason to believe, in the light of our present knowledge, that this procedure has any advantage over simple saline injections. The corpuscles introduced with the blood probably rapidly undergo destruction, and it is doubtful whether they are functionally active even for a short time.

The treatment of the underlying affections which perhaps act as the immediate causes of the disease, or which influence unfavorably the progress of a case, comprehends attention to every detail of the patient's physical condition. In particular, however, it is important to consider the question of intestinal antisepsis and other treatment directed to the gastro-intestinal tract. The diet should be so selected that the food may readily be digested and that it may undergo as little decomposition as possible. Liquid food, and particularly milk, will prove most useful. In many cases it is of advantage to have the foods predigested. The quantity at a meal should be small, but food should be given at frequent intervals. Hydrochloric acid and bitters may be used to aid the digestion.

Finally, if our speculations regarding the nature of the disease are correct, and the prime cause is gastro-intestinal fermentation, it should be possible to influence favorably the course of the disease by measures directed to the prevention of fermentation in this tract. This has undoubtedly been done in a number of cases. I have already referred to the satisfactory results obtained from colonic lavage in one case; and although this was partly due to the absorption of liquid from the bowel, it was due also, to an extent, to the mere cleansing effect of the injections. Certainly this method of treatment offers sufficient hope of beneficial results to warrant its more extended introduction. With careful manipulation it is easy to flush the entire colon with water, and probably also a large part of the small intestine; and gastric lavage may be practiced with but little inconvenience. This treatment is particularly advisable in cases in which alternating constipation and diarrhea or excessive vomiting with a fermented condition of the vomited materials give evidence of the gastro-intestinal disturbance.

Intestinal antiseptics, such as salol, hydronaphtol, and the like, have been employed, and Gibson in particular has reported good results from this mode of treatment. The failure of intestinal antiseptics to control fermentative processes in other affections, however, makes their use less advisable in pernicious anemia than theoretic deductions would lead us to expect.

The treatment of pernicious anemia in association with intestinal parasites is clear and direct. It consists in the administration of remedies such as thymol, santonin, or other anthelmintics, and the subsequent use of tonics, arsenic and iron.

In conclusion I would repeat that pernicious anemia is probably a hemolytic disease, of gastro-intestinal origin, dependent upon fermentative or putrefactive changes occurring in the stomach and bowel; that the treatment calls for remedies of a specific nature and for measures directed to the improvement of the general circulation and to the prevention of gastro-intestinal fermentation. In the present state of knowledge, arsenic is the remedy on which most reliance may be placed. Bone-marrow has seemed to give results in a number of cases, but these have not yet been sufficient to furnish ground for an accurate opinion.

TREATMENT OF RETROPOSED UTERI—CHOICE OF OPERATIONS, WITH A REVIEW OF SEVENTY-SIX OPERATIVE CASES.

By J. Coplin Stinson, M.D.,
San Francisco.

In deciding on a cure of retro-displacement of the uterus, the problem is to remove the causes and restore the uterus to its normal position. Until recently the results from operative treatments were failures in a large proportion of cases, and even now few surgeons are so successful that failures do not sometimes occur. It is well known that retro-position of the uterus is a very common affection, occurring in about twenty per cent.

of all gynecological cases, and is by far the most common form of displacement requiring treatment. We all agree that corsets should not be worn by young, growing or matured girls; especially that they should be banished from the waists of those suffering with retroversion of the uterus; that women should wear the reform dress or support their underclothing by shoulder-straps or skirt-supporters.

I believe that mechanical treatment, *i. e.* with pessaries, tampons, and applications, is very seldom curative, and is also slow and annoying to many patients; that in most cases the operative treatment is followed by a complete and permanent cure, that the majority of the remaining patients are greatly benefited by the operation, and that even the slight disfavor with which the operative treatment is regarded by some is due to the bad results obtained by surgeons whose technique has been imperfect. In looking over my list of cases in which I performed or assisted in operative treatment for retro-position of the uterus while House Surgeon at the Post-Graduate Medical School and Hospital, New York, and since I left that institution, I find they number seventy-six cases. Various methods were employed: ventral fixation in 54; modified Alexander's, 11; Alexander's, 1; vaginal fixation, 4; vaginal hysterectomy, 3; Dudley's intra-abdominal shortening of round ligaments, 2; Boldt's division of posterior ligaments, 1.

An operation to be followed by a cure should (1) remove the cause; (2) replace and maintain the uterus in its normal position; (3) permit of subsequent pregnancy, gestation, and parturition, without recurrence of the old displacement; (4) have a mortality either *nil* or not greater than that associated with the condition previous to operation.

The method of treatment depends upon the etiology, the presence or absence of adhesions, and the condition of the tubes and ovaries.

A. Treatment of Cases where the Uterus is Retro-displaced, without adhesions or disease of adnexa.—

(*a*) Remove the causes. If there is:

(1) Subinvolution with endometritis — through curettage and irrigation of the uterus;

(2) Laceration of cervix — do trachelorrhaphy or amputation of cervix, according to which is indicated;

(3) A cystocele, rectocele, or lacerated perineum—do an anterior colporrhaphy or colporro-perineorrhaphy (Dr. A. Palmer Dudley's method);

(4) A shortening of the utero-recto-sacral ligaments—make an incision into Douglas' pouch and divide shortened ligaments;

(5) An ovarian or other cyst (capable of removal through an incision into Douglas' pouch)—remove it;

(6) Fibroid or fibroid growths on posterior surface of uterus—remove these tumors.

(*b*) Shorten the round ligaments sufficiently to bring the uterus into its normal position by Dr. Edebohls'* modification of Alexander's operation. I follow this method in detail, with two exceptions: Dr. Edebohls uses silkworm-gut for suturing the ligament in the canal, with drainage; I prefer to use kangaroo tendon as a buried suture. The tendon is introduced in the following manner: The first suture traverses the wound at the level of the internal ring. It is introduced, through one lip of the aponeurosis of the external oblique, into the inguinal canal; here the taut ligament, as it emerges from the internal ring, is pierced transversely by the needle, which then traverses the outer lip of the aponeurosis. Three to five sutures are passed in a similar manner, through the aponeurosis into and across the canal, in their course through the latter piercing the ligament. These sutures when tied retain the ligament securely. For the very accurate approximation of divided edges of aponeurosis, two to four more interrupted tendon sutures are used for this layer. Close the skin wound with a continuous fine catgut suture, without drainage. I believe tendon is the most suitable suture for this operation: it is non-irritating, is not absorbed for two to three months, and will not be followed by hernia.—Busse† in his experiments showed that perfect tendinous union does not occur under ten weeks, or just about the period required for the absorption of kangaroo tendon.

B. Treatment of Cases where Adhesions exist, and both ovaries and tubes are not diseased.—

(*a*) Remove the causes, as in *A*.

(*b*) Make an incision behind the cervix into Douglas' pouch, and, keeping close to the cervix, open the peritoneum with the fingers or a snip of the scissors; introduce a finger for exploration and to break up adhesions; enlarge the wound laterally, and when adhesions are

* *New York Medical Journal*, October, 1890.

† Busse: *Deutsche Ztschr. für Chir.*, 1891–92, xxx.

separated introduce a gauze pad on a string into the pelvis, and place the patient in the Trendelenburg position* or with hips well elevated by Edebohls' method.† The intestines are thus made to enter the abdominal cavity. Another pad of gauze may now be introduced, and the adnexa can be inspected and drawn down into the vagina. By employing pelvic elevation, one can see well. After freeing all adhesions and doing plastic work on tubes and ovaries, with removal of one or other tube and ovary if diseased, next remove the gauze pads and pack wide strips of sterilized gauze into the cavity; finally pack more strips in the vagina; then place patient in the dorsal position and:

(*c*) Shorten the round ligaments, as in *A*.

C. In cases of retro-displacement with bilateral disease of the adnexa, the first step in the operation is an exploratory incision into Douglas' pouch, to settle the diagnosis. This incision is only dispensed with when Douglas' sac is so obliterated by adhesions that the latter cannot be safely separated in their entirety at this stage of the operation.

Next perform vaginal hysterectomy—by enucleating uterus and adnexa, with individual ligation of bleeding vessels only. The technique of this operation has been well described by Dr. Edebohls.‡

The After-treatment of A.: Keep the patient in bed two weeks or longer if wounds do not heal by primary union. Dress at the end of one week. If there are indications for interference, remove the dressing sooner as required. Firm dressings and double spica, reapply. If bandages become loose, apply new and firm ones, to be retained for one month after operation.

B.: In those cases where an incision is made into Douglas' pouch, the urine is to be drawn till the fourth day or till the patient passes it spontaneously. Change gauze in vagina on second day if soiled. Remove gauze from Douglas' sac on fourth day, with patient in Symes position. Fresh gauze must be introduced every three days till healing is complete. The wounds in the inguinal region are dressed as in *A*. Subsequent treatment is the same.

C.: After a vaginal hysterectomy the treatment is about the same as where Douglas' pouch is opened.

I shall now analyze my cases.

Ventral fixation was performed in fifty-four; of these two died, one from peritonitis, the other from internal hemorrhage; in the latter case a piece of peritoneum the size of a quarter had been denuded from the anterior surface of the uterus, and from this area the hemorrhage occurred. In another case, where an appendage was removed, there was an internal hemorrhage; the abdomen was reopened and the bleeding arrested. In one the operation was followed by mania, with extensive suppuration of the wound; patient died soon after removal from hospital. Bladder symptoms were noted in several; there were stitch abscesses in six; ventral hernia in one following the operation. In a majority of cases the peritoneum at the fundus was either scarified or denuded. In two cases where scarification or denudation was not employed the uterus relapsed into retroversion. Chromicized catgut was used as a buried fixation suture in about twelve per cent. of cases; silkworm-gut in the vast majority of the remaining, the stitch being removed at the end of two or three weeks. In almost every case operation gave considerable relief from symptoms. Dr. H. Kelly reports some patients who became pregnant after ventral fixation* and were successfully delivered.

The round ligaments were shortened in twelve cases. In one case Alexander's operation was performed; this case relapsed shortly after operation. In eleven Edebohls' modification of Alexander's operation was performed, combined with some plastic work on the cervix, vaginal walls, or perineum, or, where adhesions existed, incision into Douglas' pouch. In one case abdominal section was made for retro-position with adhesions; the latter were thoroughly separated, and it was then found impossible to do ventral fixation, as the uterus could not be brought forward to the abdominal wall; the abdominal wound was closed, and a modified Alexander's operation done, with an immediate satisfactory result, but in this case the uterus relapsed into its former malposition. In all cases the round ligaments were readily found after slitting up the aponeurosis to the internal ring. All the patients recovered; there was stitch abscess in one case. In every case there was considerable relief, with a complete

*W. R. Pryor, in *Medical Record* (New York), July, 1895.

†Edebohls, in *American Journal of the Medical Sciences*, January, 1895.

‡"Technique of Vaginal Hysterectomy," *American Journal of the Medical Sciences*. January, 1895.

**Journal of American Medical Association*, Dec. 21, 1895.

and satisfactory recovery of health—no bladder symptoms were noted. Mundé* reports twelve cases of pregnancy subsequent to Alexander's operation, all going on to normal delivery at full term, and the uterus remaining in normal position after the confinement; his failures were few in number, and were due, he states, to the uterus being too large or the ligaments too thin.

Vaginal fixation was performed in four cases.

Vaginal hysterectomy by enucleation, with individual ligation of bleeding vessels, was performed three times, with three recoveries. In two the operation was not difficult, but in one the uterus and adnexa were so fixed by firm and dense adhesions that the operation was slow, tedious, and difficult; yet in this case only one artery required ligating. Results were satisfactory. Patients were allowed to sit up by the tenth day, and shortly afterwards left the hospital. In two of the cases gauze drainage was employed; in the third the peritoneum of the pelvic floor was closed with a running catgut suture † without drainage. All cases were followed by considerable relief from symptoms and satisfactory recovery.

From a careful study of cases I believe that operations such as vaginal fixation and ventral fixation should not be performed. With vaginal fixation the uterus is placed in pathological anteflexion, where it becomes fixed by adhesions which will in all probability interfere with pregnancy and labor, possibly leading to uterine rupture, with fatal results to mother and child; otherwise, retroversion is likely to recur. With ventral fixation the uterus is changed from a pelvic to an abdomino-pelvic organ, more or less fixed according to the extent of the parietal adhesions, which, if not dense, may give way and the old displacement recur; conception is less likely to occur, on account of the high and more or less fixed position of the uterus; there is liability of intestinal adhesions, etc.; occasionally a patient dies from the operation or from sepsis; and ventral hernia is a possible contingency. Should the patient become pregnant, she is liable to abort; and should labor go to full term, it will in all probability not be a normal one—possibly it will be greatly prolonged, or rupture of the uterus with loss of mother or child or both may occur.

Within the past few months cases have been recorded of complication of labor following vaginal and ventral fixations—Graefe* reports two cases. One of these, a multipara, when seen by him had a dead child *in utero*, with cord prolapsed, uterus contracted, rupture threatening. There had been a previous operation for suspension of uterus. He deemed it necessary to perform supra-vaginal amputation. The woman died one and one-half hours after operation. His second case, following operation for vaginal fixation, was similar to the above: the child was in a transverse position, with rupture of the uterus threatening. The woman also had several eclamptic convulsions. Graefe did Cæsarean section, saving both mother and child. Goubaraff† reports a case following a ventral fixation: the fetus in transverse position, labor impossible, and rupture threatening. He deemed it necessary to do Cæsarean section, and in the operation found very firm adhesions between the uterus and the abdominal wall. Both mother and child were saved.

Mackinrodt discussed in the *Monatsschrift für Guburtshulfe und Gynäkologie* (1895, band ii, heft 5) the influence of suspension of the uterus upon labor, stating that the operation holds the uterus in pathological anteflexion; that pregnancy and labor are only possible when the adhesions gradually loosen spontaneously; that abortion and uterine rupture will occur, with loss of maternal and fetal life; and that should pregnancy and labor be endured, a recurrence of retroversion may be expected.

As to vaginal hysterectomy, the mortality is at or about *nil*. Baldy‡ reports thirty-four hysterectomies for bilateral disease of appendages, without a death, and also adds statistics of other American surgeons comprising 223 cases with six deaths, a mortality of 2.6+ per cent. In the cases I report, enucleation *via* vagina was employed. I think that in cases where the uterus is very firmly fixed, with cervix high up and not to be drawn down, one should proceed as in vaginal hysterectomy to circumcise the cervix, separate the uterus by enucleations from below as high as possible, and then, if it be found that the uterus cannot be drawn down, in place of prolonging the operation and

* Paul F. Mundé: Clinical Gynecology.

† Edebohls: "Technique of Vaginal Hysterectomy," *loc. cit.*

* *Monatsschrift für Geburts. und Gynäk.*, band 95, heft 6.

† *Archives de Tocologie*, 1895, No. 11.

‡ *American Journal of Obstetrics and Gynecology*, September, 1895.

endangering the patient by continuing the vaginal operation, an incision should be made in the median line above the pubes, and the enucleation, with removal of tubes, ovaries, and uterus, thus completed.

The vaginal operation is better than the abdominal: there is less shock, recovery is more rapid, danger of sepsis is less, there is no danger of hernia, and no abdominal cicatrix. All the steps of the operation are done openly. For the successful performance of vaginal enucleation: (1) keep the immediate work well in view in the centre of the field of operation; (2) dissect close to the uterus, tube, and ovary, and if any vessel spurts seize it at once with forceps and ligate with a transfixion ligature. The disadvantage of the vaginal method is that it is more difficult than the supra-pubic.

I have come to the following conclusions:

1. That in all cases of retroversion without adhesions or disease of the adnexa, plastic work should be done on the cervix, vaginal walls, or perineum, if required; and the round ligaments should be shortened by Edebohls' modified Alexander's operation, with this exception—use kangaroo tendon as a buried suture for mooring the shortened ligaments and coapting the lips of the aponeurosis of the external oblique, the wound being closed without drainage.

2. That in all cases of retroversion with adhesions, where one or other tube and ovary are diseased, plastic work should be done on the cervix, vaginal walls, or perineum, if required; an incision made into Douglas' pouch, and the adhesions separated; plastic work on tubes and ovaries, or one or other tube and ovary removed if thoroughly diseased; and the round ligaments shortened as above.

3. That in all cases where there is retrodisplacement of the uterus with bilateral disease of the appendages, vaginal hysterectomy should be the operation employed.

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OPERATION IN TYPHOID FEVER WITH PERFORATING ULCERS, HEMORRHAGE, AND FECES.

By Joseph Price, M.D.,
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The general feeling of timidity in surgeons, their hesitancy to invade deep cavities in critical cases, should not exist when there is a chance of saving life. If a surgeon should hesitate to tie the carotid or common iliac in a patient already exhausted by hemorrhage, he would rightly be condemned either for cowardice or for possessing a non-surgical spirit.

Now, typhoid perforating ulcers, whether destroying life by peritonitis, by fecal infiltration, or by exhaustion from hemorrhage, must be considered as a surgical disease. It is the sequel, the resultant complication, of typhoid, to which we refer. If we take gunshot wounds or stab wounds as a type of injury leading to all the fatal results of perforating typhoid ulcer, we shall the more clearly see the weakness of the logic of those who oppose surgical interference. There is now no dispute as to the demand for surgical interference in any of the class of diseases involving mechanical rupture or perforation of any of the viscera where as a consequence there is escape of their contents into the peritoneal cavity or risk to the integrity of their blood-vessels. This being true, it is to reason on a false line to refuse the same remedy to viscera destroyed by pathological processes, as is the intestine in typhoid fever. Of course, it may be objected that the chances for saving the patient are very small; but this is no answer to the logic of the situation. If we can save one life which would otherwise be lost, the surgery needs no further justification. It is right; it is duty. Operation for incipient peritonitis was met by this same objection, but now no surgeon will allow a patient to die without effort to save in peritonitis.

In the cases under consideration, we are to lose no time. Preparation and toilet must be thorough. Speed and dexterity are important. No mere chronic surgery will serve. I mean by chronic surgery, prolonged anesthesia, prolonged search, long incision, and needless exposure. The perforations must be located and secured by trimming and suturing, the filth thoroughly removed, and the mending thoroughly done. Ether stimulus will be valuable to the patient if not too prolonged. The structures gone through are simple and involve no dangerous region, no unnecessary opening and inoculation of the peritoneal cavity. Peritonitis and infection exist; the object of the operation is to arrest the extension of these natural consequences of perforation, which are always fatal if not arrested. The sepsis and general peritonitis must be stayed promptly in all perforating ulcers, or there will be but one result.

In these cases it is always possible to deter-

mine the condition of the patient with reasonable certainty; there is only a minimum of risk of diagnostic error. The patients when seen by the surgeon are generally found in collapse, and he determines them hopeless and refuses to operate. A prominent teacher and author says about appendicitis: "The surgeon is frequently called too late, never too early." He might have added that in many cases of perforating typhoid ulcers the surgeon is not called at all. Surgery is not once thought of by the attending physician. He tells the family the case is "hopeless," and his decision is accepted. He is likely to add: "If I can tide him over another day, giving Nature time to make repairs, he may get well." And it is surprising what a heroic and unaided effort Nature sometimes makes in these cases where sepsis and peritonitis progress slowly, the patient sometimes living three or four days after perforation, giving the physician and surgeon ample time to do successful surgery. I say successful, because the post-mortem in some of these cases has demonstrated the fact that the peritonitis and filth were localized, and in others a careful toilet would have arrested sepsis. Again, the subjects are often young. The enemy is recognized as present. It is not a concealed presence, but a known presence—the presence of a process with a history and with a record of vicious work in the past that has filled books. The question for decision is whether to surrender and accept the inevitable result of surrender—death, —or make heroic defense with the possible chance of victory. This only chance is surgical interference.

When unmistakable signs of perforation and infection have set in, the emergency is present which will not brook delay. The most heroic surgery is justifiable, and not alone justifiable but duty, where the patient is suffering from a fatal malady, one incurable by known remedies. The justifiability of the operation rests upon purely rational scientific principles, the basis of all justifiable surgical procedures, for we know that after perforation and infection have set in there is no other way except good surgery to avoid fatal result.

Where the operation is cautiously and skillfully done, if death ensues, the result cannot justly be attributed to the surgery, but rather to the desperate conditions pre-existing and for the removal of which the surgery was done. In these cases, the record of surgical successes may not be an unbroken one, yet it makes a showing of splendid and most encouraging triumphs, while, on the other hand, simple medical treatment presents an unbroken record of failures. Operation should, therefore, always be done because of the utterly hopeless condition of the patient otherwise. The lesson of surgical modesty is strongly impressed in the presence of very many maladies which, from their very nature, their location, and the relation of the parts, would seem to defy surgical effort for relief and cure. Yet in the face of every discouragement and uncertainty the one chance should be given. The surgeon or pathologist accustomed to post-mortems on this class of cases recognizes instantly on opening the abdomen that perforation of some character has taken place; fecal odor and filth are almost always present. If the surgery can be done early, and the same rules followed as those practiced in gunshot and stab wounds, we would have very many signal triumphs. Each case must be individualized, and that treatment or procedure adopted which from a scientific standpoint and the standpoint of experience promises the best chance of relief and cure. The untried is resorted to in many cases where unexpected complications are met with; and the result, even though it be fatal, may not be chargeable to the surgery, but to precedent conditions beyond all possible surgical relief.

In the very nature of things, from the very character of the trouble and the parts attacked, the mortality will always be large. But some can be saved. It has been again and again repeated that general septic or purulent peritonitis from any cause has never been saved by abdominal section, irrigation, and drainage. Many of my own friends and pupils have at my own operating-table witnessed operations of this character in which I evacuated enormous quantities of filth, freed general adhesions, wiped large quantities of lymph from the bowel with gauze, trimmed it off the bowel with scissors, and stated to those present, while I was using a number of pitchers of water, that there was but one treatment for peritonitis, and that was to wash and drain it away. It is encouraging to see such statements as the following: "I have had the pleasure of seeing two cases among many of septic inflammation of the peritoneum recover." The work of Dr. Richard Douglas, of Nashville, in operations for purulent peritonitis, shows over fifty per cent. of recoveries.

Dr. Reginald H. Fitz* found the mortality from perforation to be 6.58 per cent. in 4680 cases of typhoid, as tabulated by various authors. Holscher† found it as a cause of death in fatal cases to occur in six per cent. of 2000 cases. Murchison‡ found a greater frequency, 11.38 per cent. in 1721 cases, collected from various sources.

The seat of perforation in a group of cases collected by Fitz, 167 in all, was in the ileum in 136 (81.4 per cent.); in the large intestine in 20 (12.9 per cent.); in the vermiform appendix in 5; in Meckel's diverticulum in 4; and in the jejunum in 2. The duration of life after symptoms of perforation arose was usually short. Of 134 cases, 37.3 per cent. died on the first day, 29.5 per cent. on the second day, and 83.4 per cent. during the first week.

Earlier investigators — Louis,§ Chomel,‖ and Jemer¶—considered perforation as fatal. Tweedie** states that "intestinal perforation is always fatal, generally within thirty-six hours." Griesinger†† claims "a perforation may heal, but never in cases of general peritonitis — only when inflammation is wholly circumscribed." Murchison asserts that "rare cases are met with where recovery ensues after all the symptoms of peritonitis from perforation."

Operation for relief of symptoms caused by perforating typhoid ulcer was done by Lucke‡‡ in 1887. Symptoms of perforation took place on the eighteenth day, and a section was done twelve hours after their onset; the edges of the ulcer were cut out, and the hole closed by sutures. The operation lasted two hours, and the patient died a few hours later. In the same year, Dr. R. B. Boutecon§§ operated for this condition, with the patient in profound collapse, the rupture having occurred thirty-six hours before death. He also operated on one other case five hours after symptoms of perforation. One perforation was found four or five inches from the ileo-cecal valve; this he closed by Lembert suture; irrigation and a rubber drainage-tube were used; patient died during the first night.

* *Boston Medical and Surgical Journal*, 1891.
† *Münch. Med. Woch.*, 1891.
‡ Treatise on Continued Fevers, second edition.
§ Recherches sur la Maladie comme sons les Noms de Gastro-enterite. 1829.
‖ Leçons de Clin. Méd. 1834.
¶ *Monthly Journal of Medical Science*, 1849.
** Cyclopedia of Practical Medicine: Fever. 1850.
†† Virchow's Handb. d. Sp. Path. in Therap. 1864.
‡‡ *Deutsche Ztschr. für Chir.*, 1887.
§§ *Journal of the American Medical Association*, 1890.

Frank* states that Hahn operated on two cases of peritonitis from typhoid perforation; both patients died. Wagner† operated upon a woman convalescing from typhoid fever, for perforation of an ulcer; eventration of intestines, irrigation, suture of the wound without drainage; recovery.

Senn‡ operated in 1889 upon a patient thought to have a volvulus; death followed in a few hours; perforation was discovered about six inches above the ileo-cecal valve. Kimura,§ a surgeon in the Japanese Navy, records a case; fatal result in 9½ hours. Morton‖ reports a case in which a perforation in the ileum was sutured; death in six hours. Dr. James E. Thompson reports a case in the *Journal of the State Medical Association* of Texas, 1893: an engineer, aged thirty-six, was operated upon on Sunday at 3 P.M., and died on Monday at 2 A.M.; perforation was found in the ileum one foot from the ileo-cecal valve; this was closed, he was irrigated with hot boric solution, and drainage was used. In his paper Dr. Thompson gives the histories of nineteen cases, with four recoveries. Some of these cases are very doubtful.

Dr. Robert Abbe¶ reports the case of a young married woman, who had suffered from typhoid for three weeks and was apparently convalescing. On October 31, 1895, she was suddenly seized with great pain, vomited and was much collapsed; abdomen tympanitic. Two and a half days after this, the attending physician called Dr. Abbe, as she had become much worse, and he insisted upon immediate operation. Section, November 3; median incision; intestines found distended, inflamed, and smeared with lymph; pelvis and lower abdomen filled with foul, purulent, fetid intestinal extravasation, which was cleaned out and irrigation used. Search revealed a gangrenous perforation of an inflamed Peyer's patch a quarter of an inch in diameter. This was closed by interrupted silk sutures, over which two layers of Halsted mattress stitches were placed. Iodoform-gauze drainage was used; abdominal wound not closed; gauze temporarily removed in forty-eight hours, and a loose one applied. Fluid feces leaked from the wound for two

* *Beil. zum Centralbl. für Chir.*, 1888.
† *Beil. zum Centralbl. für Chir.*, 1889.
‡ *Medical News*, 1889.
§ *British Medical Journal*, 1890.
‖ *Medical News*, Dec. 24, 1887.
¶ *Medical Record* (New York), Jan. 5, 1895.

weeks. Patient made a nice recovery. Dr. Abbe, in his paper, has collected, including his case, five cases, with two recoveries. Adding these to the others, we have twenty-four cases, with six recoveries.

These reported cases, together with the two of my own which I have reported, make twenty-six cases, with eight recoveries.

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*REPORT OF 182 CASES OF PULMONARY TUBERCULOSIS TREATED IN THE WINYAH SANITARIUM, ASHEVILLE, N. C., WITH TUBERCULOCIDIN AND ANTIPHTHISIN, KLEBS.**

By Karl von Ruck, B.S., M.D.,
Director of the Sanitarium.

The cases included in this report were treated upon the usual dietetic and hygienic principles, while climatic treatment was systematically carried out. In addition to such well established and recognized modes of treatment, tuberculocidin and antiphthisin were also employed, and, the writer believes, with very satisfactory results. The two preparations are practically identical, and, so far as I have been able to observe, the therapeutical effects are the same. They differ in their preparation in so far that tuberculocidin is prepared from Koch's tuberculin, containing probably more of the extractive substances of the germ, while antiphthisin is prepared directly from the ripe culture, the germs being first filtered out. In preparing tuberculocidin the germs are present while the culture fluid is concentrated by heat to one-tenth of its original bulk, and are thereby further extracted.

The number of cases included in this report is so great, that only essential data, which show the patient's condition on admission and on discharge, can be given, and I regret that space forbids publishing the instructive histories and the various changes observed during the course of treatment.

A number of the patients who are reported as not improved or as having grown worse had, previous to their discharge, given marked evidence of changes for the better, but lost their improvement on account of complications which arose as a natural result or as a consequence of indiscretion against the commission of which the patient had been duly cautioned beforehand.

In the classification adopted I have avoided the usual method of division into stages of "infiltration" (first stage), "softening" (second stage), and "excavation" (third stage), because such a classification does not at all correspond to the prospects of the individual case, and is therefore useless as a basis for the estimation of the value of remedies employed; and I hardly need to mention that, for instance, a patient with a small cavity in one upper lobe who would be classified as in the third stage might have an excellent prospect for arrest of the disease and complete recovery; whereas another, with diffused, disseminated tubercular infiltration, with or without beginning softening, might be practically in a serious if not hopeless condition, but would usually be classified as in the first or second stage.

Upon such considerations I thought it more instructive to classify the cases according to their general prospects for recovery, taking into consideration not only the local lesions in the lung, but also the existing complications, the natural resisting power as evidenced by the nutritive processes, the state of the circulation, etc.

Under "Class A" I have thus included all cases where the prospects for the accomplishment of a good result on the whole appeared good. Nevertheless this series includes several cases in which cavity was present, several others in which there was evidence of circumscribed softening, and a few with slight degrees of tubercular laryngitis.

The condition of the patients in "Class B" was decidedly less favorable, the lung affections and complications were more serious, and the general health much more impaired, as will be noted from examination of leading symptoms recorded.

"Class C" includes the cases in which the prognosis was, on the whole, quite unfavorable, the lung disease extensive, septic and other serious complications often present, nutrition seriously impaired, and the general condition such that not much could be hoped for in the way of betterment in any important direction. In quite a number of this class the treatment with antiphthisin was undertaken solely to see if any real benefit could be derived in such cases.

In the headings of the report, by "Numbers of Tubercle Bacilli" is meant the number counted upon a millimeter square, one milligramme of homogeneous sputum having

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*Presented to the Parish Medical Society of New Orleans, La., March, 1896.

been spread equally upon the cover-glass. I doubt, however, whether much value is to be attached to the actual numbers counted, unless a constant and steady decrease is noted over a longer period of time; much more interesting and probably of greater importance are the "degeneration forms" which we observed without exception in all the cases treated with antiphthisin, and as a rule by the end of the first month. It is true that these "degeneration forms" occur also in the sputum of tubercular patients who are not treated with antiphthisin, and a few are present in most specimens, but as a rule the perfect forms predominate.

It is the uniformity of this observation of degeneration, often to the exclusion of even a single well formed or well stained bacillus, and the fact that after a time the number also became markedly less, and in many cases the bacilli entirely disappeared, which is of interest in connection with the remedy employed.

Under "Vital Capacity" the figures represent cubic inches of air which the patient could deliver in the spirometer after a deep inspiration.

Under "General Results," cases reported as "apparently cured" were free from all symptoms; there was no expectoration to examine, or the slight mucous expectoration was free from tubercle bacilli; the local conditions of the tubercular process were recovered from, there being a normal percussion note and a vesicular respiratory murmur over the previously abnormal area.

Under "Disease Arrested" and "Greatly Improved," if expectoration was still present it was as a rule free from tubercle bacilli; locally the more recent areas of tubercular infiltration had given place to normal conditions; the other lesions showed entire absence of râles; and the remaining abnormal percussion and auscultatory phenomena were believed to indicate the usual shrinking and fibroid changes.

"Improved" is of course a relatively less favorable result, and is comparative with the condition upon admission.

"Not Improved" indicates that, on the whole, the patient has held his own—is stationary—but his prospects are not materially better than they were on admission.

Of slight degrees of improvement we have taken no notice; indeed, even in the most of the "not improved" or "grown worse" cases, it would not have been difficult to point to one or more symptoms which were better than on admission; the fact that the patient's future prospects were thereby not improved governed me entirely in the verdict.

With these explanations I trust that the accompanying table will be instructive enough to justify its publication:

CLASS A.

Case No.	Record No.	Condition of Patient on Admission.										Condition of Patient on Discharge.										General Result.
		Temperature.	Pulse.	Cough.	Expectoration.	Tubercle Bacilli.	Night Sweats.	Vital Capacity.	Weight.	Complications.	Months treated.	Temperature.	Pulse.	Cough.	Expectoration.	Tubercle Bacilli.	Night Sweats.	Vital Capacity.	Weight.	Complications.	
1	2063	98	88	Slight	Slight mucous	0	None	200	160	None	5	98	88	None	None	None	None	270	164	None	Apparently recovered.
2	2075	98	88	Slight	Slight muco-pur.	10	None	200	150	None	5	98	88	None	None	None	None	200	155	None	Dis. arrested; greatly imp'd.
3	2090	98	88	Constant back'g	Slight mucous	Large	None	200	165	Anæmia	5	98	88	None	None	None	None	220	156	Cured	Apparently recovered.
4	2093	98	88	Very slight	Slight muco-pur.	0	None	170	155	None	5	98	88	None	None	None	None	190	150	None	
5	2140	98	88	Slight	Slight mucous	0	None	175	158	None	5	98	88	None	None	None	None	190	175	None	
6	2165	98	88	Slight	Slight muco-pur.	20	None	150	157	None	5	98	88	None	None	None	None	200	155	None	
7	2185	98	88	Slight	Mod. muco-pur.	20	None	150	150	Gastric catarrh, anemia	5	98	88	None	None	None	None	250	155	Cured	
8	2186	98	88	Moderate	Moderate mucous	0	None	150	154	None	5	98	88	None	None	None	None	250	155	None	
9	2203	98	88	Slight	Slight mucous	40	None	175	157	None	5	98	88	None	None	None	None	270	158	Cured	
10	2218	98	88	Moderate	Slight muco-pur.	30	None	150	150	Tubercular laryngitis	5	98	88	None	Slight mucous	30	None	190	155	None	Dis. arrested; greatly imp'd.
11	2228	98	88	Severe	Mod. muco-pur.	0	None	180	155	None	5	98	88	None	Slight mucous	0	None	190	145	None	Improved
12	2255	98	88	Hacking	None	0	None	220	148	None	5	98	88	None	None	0	None	200	150	None	Apparently recovered.
13	2259	98	88	Slight	Slight muco-pur.	0	None	180	145	None	5	98	88	None	None	0	None	270	153	None	
14	2260	98	88	Slight	Slight muco-pur.	0	None	180	148	None	5	98	88	None	None	0	None	260	150	None	
15	2280	98	88	Slight	Slight muco-pur.	0	None	205	148	None	5	98	88	None	None	0	None	330	150	None	
16	2285	98	88	Slight	Slight mucous	0	None	200	148	None	5	98	88	None	None	0	None	300	150	None	
17	2291	98	88	Slight	Slight mucous	20	None	270	150	None	5	98	88	None	None	0	None	305	150	None	Dis. arrested; greatly imp'd.
18	2294	98	88	Slight	Slight mucous	0	None	200	145	None	5	98	88	None	Slight mucous	0	None	220	150	None	Apparently recovered.
19	2330	98	88	Slight	Slight mucous	0	None	200	150	None	5	98	88	None	None	0	None	200	150	None	
20	2334	98	88	Slight	Slight mucous	0	None	200	150	Tubercular laryngitis	5	98	88	None	None	0	None	225	150	None	
21	2344	98	88	Slight	Slight mucous	0	None	150	150	None	5	98	88	None	None	0	None	410	154	Much improved	Greatly improved.
22	2404	98	88	Hacking	Mod. muco-pur.	0	None	150	150	Tubercular laryngitis	5	98	88	None	None	0	None	205	155	None	Apparently recovered.
23	2413	98	88	Severe	Slight muco-pur.	416	None	120	145	None	5	98	88	None	Slight muco-pur.	0	None	245	150	None	Greatly improved.
24	2436	98	88	Slight	None	57	Frequent	150	150	Tub. peritc., with diarrh	5	98	88	None	None	0	None	300	156	Cured	Apparently recovered.
25	2438	101.4	88	Moderate	Mod. muco-pur.	0	None	300	145	None	5	98	88	None	Mod. muco-pur.	0	None	300	150	None	
26	2491	98	88	Slight	Slight muco-pur.	0	None	200	150	None	5	98	88	None	None	0	None	200	150	None	
27	2504	98	88	Slight	None	0	None	200	150	None	5	98	88	None	None	0	None	200	150	None	
28	2530	98	88	Slight	Mod. muco-pur.	0	None	135	150	None	5	98	88	None	Mod. muco-pur.	0	None	205	155	None	
29	2540	98	88	Moderate	Slight muco-pur.	0	None	200	155	None	5	98	88	None	Slight muco-pur.	0	None	200	155	None	
30	2563	98	88	Constant back'g	Slight muco-pur.	0	None	200	155	None	5	98	88	None	Slight muco-pur.	0	None	200	155	None	

CLASS B.

Case No.	Record No.	Condition of Patient on Admission. Temperature.	Pulse.	Cough.	Expectoration.	Tubercle Bacilli.	Night Sweats.	Vital Capacity.	Weight.	Complications.	Months treated.	Condition of Patient on Discharge. Temperature.	Pulse.	Cough.	Expectoration.	Tubercle Bacilli.	Night Sweats.	Vital Capacity.	Weight	Complications.	General Result.
33	2028	102	100	Moderate	Mod. muco-pur.	120	None	160	122	None	3.5	98.2	80	None	None	0	None	165	131	None	Apparently recovered.
34	2040	101	80	Moderate	Slight muco-pur.	480	None	120	106	Anemia	10	98.2	84	None	None	0	None	160	116	Cured	" "
35	2050	100.1	96	Moderate	Slight muco-pur.	406	Occasional	100	110	None	3	98.3	90	Slight	Slight mucous	32	None	115	114	None	Greatly improved.
36	2066	101	100	Severe	Profuse purulent	240	Occasional	105	116	None	2	99	72	Slight	Mod. muco-pur.	16	None	120	120	None	Improved.
37	2070	102	104	Severe	Profuse muco-pur.	600	Occasional	160	135	Tubercular laryngitis	7	98.2	88	None	None	0	None	240	152	Cured	Apparently recovered.
38	2072	101	120	Moderate	Slight muco-pur.	[illegible]	Occasional	115	118	None	11	98.2	80	None	None	0	None	200	136	None	" "
39	2077	100.3	84	Severe	Mod. muco-pur.	592	Occasional	80	96.5	Gastric catarrh	3	99	84	Slight	Slight mucous	4	None	100	100.5	Cured	Greatly improved.
40	2079	103	136	Severe	Profuse muco-pur.	2720	Every night	85	106	Sepsis	3	99	84	Slight	Mod. muco-pur.	640	None	...	100	Cured	" "
41	2080	100	88	Slight	Slight muco-pur.	512	None	200	138	None	5	98.2	70	Slight	Mod. muco-pur.	4	None	200	162	None	" "
42	2090	101	104	Moderate	Mod. muco-pur.	480	Frequent	190	136	Tubercular laryngitis	7.5	98.2	82	Slight	Slight mucous	320	None	205	170	Cured	" "
43	2091	102	106	Moderate	Mod. muco-pur.	560	Frequent	170	149	None	4	98.2	90	None	None	0	None	235	159	None	Apparently recovered.
44	2092	101	90	Moderate	Mod. muco-pur.	320	Occasional	100	86	Tubercular diarrhea	6	98.2	90	None	None	5	None	160	114	Cured	Greatly improved.
45	2104	100	100	Moderate	Slight muco pur.	1200	None	...	104	Tubercular laryngitis	7	98.2	86	None	None	0	None	150	114	Cured	Apparently recovered.
46	2131	100	112	Moderate	Profuse purulent	520	Occasional	135	104.5	None	6.5	98.2	88	Slight	Slight	0	None	185	116	Cured	" "
47	2133	100.3	110	Moderate	Profuse muco-pur.	800	Occasional	130	122	None	5	99.2	88	Slight	Slight mucous	0	None	160	133	None	" "
48	2136	99.4	100	Severe	Mod. muco-pur.	960	None	155	144	Adv'd tuberc. laryngitis	6	98.2	80	Slight	Mod. muco-pur.	800	None	...	156	Improved	Improved.
49	2178	100	84	Severe	Mod. muco-pur.	640	Occasional	140	125	None	4	98.2	84	Slight	Slight muco-pur.	320	None	180	146	None	Greatly improved.
50	2188	99	70	Moderate	Slight muco-pur.	160	None	105	143	None	1.5	99	72	Slight	Slight mucous	0	None	100	155	None	Apparently recovered.
51	2189	102	98	Moderate	Mod. muco-pur.	2	None	145	120	None	4	99	96	None	None	0	None	160	128	None	" "
52	2192	100	104	Severe	Mod. muco-pur	640	Occasional	190	140	None	5	98.2	100	Slight	Slight mucous	4	None	230	156	None	Greatly improved.
53	2201	100.3	104	Moderate	Slight muco-pur.	960	None	160	112	Glandular tuberculosis	3	99	100	Slight	Slight mucous	6	None	160	116	Cured	" "
54	2215	100	96	Moderate	Profuse muco-pur.	800	Occasional	180	130	Tub. laryngitis, aphonia	2.5	99	100	Mod.	Slight muco-pur.	320	None	200	136	Imp'd, voice ret'd	Improved.
55	2231	99.4	88	Moderate	Mod. muco-pur.	672	None	100	116	None	4.5	99	84	Slight	None	0	None	165	148	None	Apparently recovered
56	2232	101.4	98	Moderate	Mod. muco-pur.	960	None	110	119	Gastric catarrh	3	98	88	Slight	Slight mucous	16	None	150	125	Improved	Improved.
57	2239	102	120	Severe	Mod. muco-pur.	966	Frequent	...	116	Mild sepsis	1	102	120	Severe	Mod. muco-pur.	640	None	...	112	Same	Not improved.
58	2242	99.2	100	Severe	Slight mucous	160	None	...	113	Tubercular laryngitis	3	100	106	Severe	Mod. muco-pur.	208	None	160	125	Grew worse	Grown worse.
59	2246	103	92	Moderate	Mod. muco-pur.	1440	Occasional	...	113	Tubercular laryngitis	2	98.2	80	Mod.	Slight muco-pur.	640	None	150	116	Slightly improved	Improved.
60	2248	99.3	112	Moderate	Mod. muco-pur.	240	None	110	110	None	5.5	101	112	Severe	Mod. muco-pur.	188	None	100	108	None	Grown worse.
61	2258	104	120	Moderate	Slight muco-pur.	32	Occasional	90	83	None	7	98.2	84	None	None	0	None	120	120	None	Apparently recovered.
62	2280	100	88	Moderate	Mod. muco-pur.	150	None	200	150	None	3.5	98.2	80	None	None	0	None	245	165	None	" "
63	2296	100	100	Moderate	Mod. muco-pur.	16	Occasional	120	132	None	2	99	86	Slight	Slight mucous	8	None	170	142	None	Greatly improved.
64	2298	101	116	Moderate	Mod. muco-pur.	352	Frequent	100	98	None	4	98	88	Slight	Slight mucous	64	None	90	112	None	" "
65	2299	100	112	Moderate	Occasional	520	None	70	90	Severe anemia	1	98.2	96	Slight	Slight mucous	128	None	...	92	Not improved	Not improved.
66	2303	101	104	Moderate	Mod. muco-pur.	7972	None	180	136	None	4	99.5	76	Slight	Slight mucous	87	None	200	147	None	Improved.
67	2304	101	92	Moderate	Mod. muco-pur.	682	None	190	113	None	4	99	88	Slight	Slight mucous	41	None	110	119	None	"
68	2316	99.2	90	Severe	Slight muco-pur.	330	Frequent	115	112	None	4	98.3	96	Occas.	Occas slight muc.	3	None	125	120	None	Greatly improved.
69	2348	100	106	Severe	Slight muco-pur.	96	None	100	113	Anemia	2.5	98.3	86	Slight	None	0	None	125	145	Cured	Apparently recovered.
70	2358	99.4	112	Moderate	Mod. muco-pur.	100	None	80	106	Tub. laryngitis, aphonia	6	99	108	Slight	Slight muco-pur.	480	None	120	114	Imp'd, voice ret'd	Improved.
71	2376	99.2	84	Severe	Mod. muco-pur.	1284	Occasional	110	123.5	Tubercular laryngitis	3	98	86	Slight	Slight mucous	908	None	130	130	Improved	" "
72	2380	99.2	112	Severe	Mod. muco-pur.	8	Frequent	110	107	Cerebral symptoms	8	99	100	Slight	Slight muco-pur.	8	None	190	139.5	Disappeared	Apparently recovered.
73	2388	98.2	92	Moderate	Mod. muco-pur.	1504	None	175	135	None	4.5	98.2	78	Slight	Slight muco-pur.	940	None	220	132.5	None	Improved.
74	2394	100	96	Moderate	Mod. muco-pur.	1	None	135	105	None	2	99.2	72	Slight	Slight muco-pur.	488	None	140	118	None	"
75	2305	100	88	Moderate	Mod. muco-pur.	3	None	200	148	None	1	99	87	Slight	Slight muco-pur.	0	None	200	156	None	Dis. arrested; greatly imp'd.
76	2421	100.3	70	Moderate	Mod. muco-pur.	1	Every night	110	121	None	3.5	98.2	84	None	None	0	None	130	137	None	Apparently recovered.
77	2425	101	88	Moderate	Mod. muco-pur.	5400	None	180	130	Tubercular otitis media	5	98.4	80	Slight	Slight muco-pur.	600	None	200	152	Cured	Greatly improved.
78	2426	99.2	90	Moderate	Mod. muco-pur.	688	None	140	118	None	3	98.2	84	Slight	Slight muco-pur.	160	None	165	126	None	" "
79	2437	100.1	100	Moderate	Mod. muco-pur.	2	None	120	112	None	3	98.2	84	None	None	0	None	155	132	None	Apparently recovered.
80	2438	101	80	Slight	Mod. muco-pur.	307	None	160	144	None	4	98.4	80	None	None	0	None	180	167.5	None	" "
81	2439	100	108	Severe	Mod. muco-pur.	ad inf.	Occasional	125	107	Tubercular diarrhea	2	100	90	Slight	Slight mucous	640	None	145	120	Cured	Greatly improved.
82	2447	102	108	Moderate	Mod. muco-pur.	ad inf.	Every night	...	116	Sepsis	2.5	99	96	Mod.	Slight muco-pur.	96	None	...	120	Cured	" "
83	2449	99.4	86	Moderate	Profuse purulent	540	Occasional	135	109	Gastric catarrh	3.5	98	80	Slight	Slight muco-pur.	160	None	150	132	Improved	" "
84	2456	100	84	Moderate	Mod. muco-pur.	112	None	170	130	None	4	98.2	76	None	None	0	None	185	146	None	Apparently recovered.
85	2459	101.3	110	Moderate	Mod. muco-pur.	570	Occasional	145	128	Tuberc. laryngitis, ulcer	3	102	112	Mod.	Mod. muco-pur.	304	None	160	126	Not improved	Not improved.
86	2460	99.2	72	Slight	Slight mucous	6	None	80	101	None	1.5	98.2	80	None	None	0	None	195	114	None	Dis. arrested; greatly imp'd.
87	2461	101	100	Moderate	Moderate mucous	204	None	120	139	Chronic pleurisy	3.5	98.2	82	Slight	Slight muco-pur.	500	None	150	139	Improved	Improved.
88	2463	99.3	75	Moderate	Moderate mucous	34	None	150	129.5	Gastric catarrh	3.5	98.2	65	Mod.	Profuse muco-pur.	56	None	190	136	Improved	"
89	2464	100	84	Moderate	Moderate mucous	564	None	100	132	Severe anemia	6	98.2	80	None	None	0	None	160	145.5	Cured	Apparently recovered.
90	2465	100	96	Moderate	Moderate mucous	256	None	230	130	Tubercular laryngitis	4.5	98.2	82	Slight	Slight mucous	11	None	240	142.5	Improved	Greatly improved.
91	2466	101	85	Moderate	Moderate mucous	360	Occasional	115	105	Gastric catarrh	2.5	99.4	80	Slight	Slight mucous	534	None	125	107.5	Improved	Improved.
92	2478	99	90	Moderate	Moderate mucous	16	None	215	120	Tubercular diarrhea	1.5	99	92	None	None	0	None	225	146	Cured	Apparently recovered.
93	2481	100.3	100	Moderate	Moderate mucous	38	None	...	117	None	2	98.2	90	Slight	Slight muco-pur.	140	None	...	119	None	Greatly improved.
94	2491	103.2	112	Moderate	Moderate mucous	44	Every night	...	87	Sepsis	4	103.3	84	Slight	Slight muco-pur.	660	None	...	...	Grew worse	Grown worse.
95	2492	99	90	Slight	Moderate mucous	88	None	145	110	None	4	98.2	96	None	None	0	None	145	122	None	Apparently recovered.
96	2495	99.6	96	Slight	Moderate mucous	6	None	105	100	None	4	98.2	84	None	None	0	None	100	116	None	" "
97	2497	99.3	84	Moderate	Moderate mucous	228	Occasional	130	115	None	2	99	90	Slight	None	0	None	165	133	None	" "
98	2504	99	84	Slight	Moderate mucous	408	None	170	123	None	4	98	84	Slight	Slight mucous	182	None	215	134	None	Greatly improved.
99	2469	100.2	104	Severe	Moderate mucous	6	Frequent	170	137	None	6	98.2	88	Slight	Slight mucous	34	None	170	145	None	" "
100	2270	100.4	110	Hacking	Moderate mucous	784	None	85	99	None	6	98	80	None	Slight muco-pur.	696	None	102	108.5	None	Improved.
101	2451	100	100	Moderate	Moderate mucous	370	None	80	91	None	6.5	98	84	None	Slight muco-pur.	54	None	95	106	None	"
102	2505	103	78	Moderate	Moderate mucous	1160	Occasional	80	103	Severe anemia	3.5	98	80	None	None	0	None	105	106	Cured	Apparently recovered.
103	2486	99	72	Moderate	Moderate mucous	480	None	140	129	None	5	98.2	72	None	None	56	None	175	141	None	Greatly improved.
104	2485	100.2	88	Moderate	Moderate mucous	790	Occasional	140	101	Albuminuria	5.5	98.2	72	None	None	0	None	110	117	Intermittent	Apparently recovered.
105	2479	99.3	104	Moderate	Moderate mucous	776	None	105	111.5	None	4	99	84	Slight	Slight mucous	80	None	115	135	None	Greatly improved.
106	2274	102	116	Moderate	Moderate mucous	80	Occasional	120	102	None	2.5	99.3	100	Slight	Slight mucous	48	None	160	111	None	Improved.

NOTE.—Opposite Case Nos. 87 to 106, inclusive, under Expectoration (on admission), "Moderate mucous" should read Moderate *muco-purulent*

CLASS C.

Case No.	Record No.	Condition of Patient on Admission.									Months Treated.	Condition of Patient on Discharge.									General Result.
		Temperature.	Pulse.	Cough.	Expectoration.	Tubercle Bacilli.	Night Sweats.	Vital Capacity.	Weight.	Complications.		Temperature.	Pulse.	Cough.	Expectoration.	Tubercle Bacilli.	Night Sweats.	Vital Capacity.	Weight.	Complications.	
107	2021	102	130	Severe	Profuse cavernous	360	Frequent	80	86	Tuberc. ulcer'n nasal sep	4	99	95	Slight	Slight muco-pur	32	None	105	125	Continuing	Greatly improved.
108	2058	102	132	Severe	Mod. muco-pur	464	Frequent	100	95.5	Tubercular diarrhea	13	98.2	88	Slight	Slight mucous	0	None	115	114	Cured	Apparently recovered.
109	2059	102.2	120	Severe	Profuse muco-pur	1020	Every night	...	106	Sepsis	1.5	100	104	Mod.	Slight muco-pur	850	None	...	119.5	Improved	Improved.
110	2060	102.8	120	Severe	Profuse cavernous	460	Every night	140	135	Tuberc. laryngitis, sepsis	18	99	100	Slight.	Slight muco-pur	0	None	..	..	Improved	Died of amyloid degen.
111	2078	101.3	114	Severe	Profuse cavernous	540	Every night	85	106	Sepsis	3	100	96	Mod.	Slight muco pur	4	None	100	100.5	Cured	Improved.
112	2082	104	136	Severe	Mod. muco-pur	512	None	200	135	None	5	98.2	70	Slight.	Slight muco-pur	4	None	200	162	None	Greatly improved.
113	2110	100	84	Severe	Mod. muco-pur	480	Occasional	105	102	None	5	99	100	Slight.	Slight muco-pur	480	None	120	104	None	Improved.
114	2113	102	116	Severe	Profuse muco-pur	1120	Frequent	100	120	Tub. larynx, corneal ulc	13	98.2	76	None.	None	0	None	210	139	Cured	Apparently cured.
115	2114	103	124	Severe	Profuse muco-pur	1520	Every night	...	88	Sepsis	4	93.3	100	Mod	Moderate purulent.	880	None	215	112	Cured	Greatly improved.
116	2115	102	136	Severe	Profuse muco-pur	1020	Every night	80	108	Sepsis	18	93.3	88	Slight.	Moderate purulent.	135	None	160	135	Cured	" "
117	2116	101	100	Severe	Profuse muco-pur	480	Frequent	120	120	Tubercular laryngitis	13	98	88	Slight.	Slight mucous	2	None	130	130	Cured	" "
118	2119	101	96	Severe	Mod. muco-pur	640	None	70	102	None	9	98.2	84	Slight.	Slight mucous	32	None	125	116	None	" "
119	2130	101	112	Severe	Mod. muco pur	520	None	70	112	Tubercular laryngitis	18	98	88	Slight.	Slight mucous	2	None	150	128	Cured	" "
120	2138	103	120	Severe	Profuse cavernous	612	Every night	...	90	Sepsis	7	101	112	Mod.	Mod. muco-pur	400	Freq	...	86	Grew worse	Grown worse.
121	2162	99	100	Severe	Mod. cavernous	800	Occasional	120	108	None	12	98.2	80	Slight.	None	0	None	200	136	None	Apparently recovered.
122	2168	100	140	Severe	Mod. cavernous	320	Occasional	60	129	Cardiac complication	4	99	110	Mod.	Mod. muco-pur	0	None	100	132	Improved	Greatly improved.
123	2174	102	86	Severe	Profuse cavernous	300	Every night	150	125	Tub. laryngitis, ulcerous	3	102	100	Severe	Profuse cavernous.	960	None	...	121	Grew worse	Grown worse.
124	2180	101	126	Severe	Profuse cavernous	640	Every night	70	103	Old pneumo-thorax	4	98.6	96	Slight.	Slight mucous	0	None	120	111	Improved	Apparently recovered.
125	2181	105	140	Severe	Slight cavernous	960	None	170	133	Acute dissemination	6	99	112	Slight.	Slight mucous	48	None	120	140	Arrested	Greatly improved.
126	2191	102	112	Severe	Profuse cavernous	480	Frequent	80	108	Sepsis	9	101	108	Mod.	Profuse cavernous.	192	Occa.	...	104	Continued	Grown worse.
127	2198	100	100	Severe	Profuse muco-pur	960	Frequent	50	103	Severe anemia	7	102	112	Severe	Profuse muco-pur	1780	Freq	...	95	Tuberc. diarrhea	" "
128	2200	101	90	Severe	Profuse muco-pur	1600	Frequent	120	103	Tubercular diarrhea	5	101	120	Severe	Profuse muco-pur	640	Freq.	...	90	Grew worse	" "
129	2202	104	112	Severe	Mod. muco-pur	1280	Frequent	...	...	Sepsis	1	100	100	Mod.	Mod. muco-pur	1600	None	...	...	Slightly improved	" "
130	2216	103.3	90	Severe	Mod. cavernous	2400	Frequent	80	104	Tuberc. laryngitis, sepsis	5	99	100	Mod.	Mod. cavernous	320	None	...	...	Slightly improved	Died.
131	2220	102	120	Severe	Profuse cavernous	800	Every night	...	90	Tub. middle ear, sepsis	6	101	120	Severe	Profuse cavernous.	16	None	...	190	Slightly improved	Grown worse.
132	2233	104	130	Severe	Profuse cavernous	1440	Every night	130	118	Tub. larynx, aph., sepsis	3	100	100	Slight	Slight muco-pur	80	None	140	130	Greatly improved	Greatly improved.
133	2238	104.2	144	Constant hack'g	Slight mucous	1120	Occasional	30	120	General acute dissem.	6	99.3	88	Slight.	Slight mucous	80	None	160	130	Disappeared	" "
134	2240	102.1	100	Severe	Profuse mucous	446	Frequent	...	100	Adv. tub. larynx, sepsis	5	...	...	...	...	320	...	...	...	Grew worse	Grown worse.
135	2254	102	136	Severe	Moderate mucous	540	Occasional	...	100	Sepsis	4.5	...	...	...	...	352	...	...	...	Grew worse	" "
136	2256	103	136	Severe	Profuse muco-pur	1600	Every night	...	105	Diffuse miliary tuberc	1.5	...	...	...	...	...	...	...	...	Grew worse	" "
137	2263	100.2	100	Severe	Mod. cavernous	1210	Occasional	155	126	Adv. tuberc. laryngitis	4.5	98	100	Mod.	Slight muco-pur	0	None	185	132	Improved	Greatly improved.
138	2266	101	112	Constant	Slight muco-pur	800	None	100	136	Tubercular laryngitis	5.5	99	88	Slight.	Slight mucous	5	None	145	148	Much improved	" "
139	2271	102	130	Severe	Profuse cavernous	ad inf.	Every night	...	100.5	Sepsis	6	100	120	Mod.	Profuse cavernous	540	Occa.	...	95	Grew worse	Grown worse.
140	2272	102.4	124	Severe	Profuse cavernous	640	Every night	110	90	Sepsis, tuberc. laryngitis	2	101	112	Mod.	Mod. cavernous	64	None	...	92	Slightly improved	Improved.
141	2277	101	112	Moderate	Moderate purulent	256	Frequent	90	101.5	Adv. tuberc. laryngitis	4.5	101	116	Mod.	Mod. purulent	96	Occa.	90	95	Not improved	Grown worse.
142	2288	101	84	Severe	Mod. muco-pur	48	Occasional	160	132	None	4.5	98.2	96	Slight.	Slight muco-pur	112	None	175	140	None	Greatly improved.
143	2290	102	112	Severe	Profuse cavernous	260	Every night	...	86	Sepsis	3.5	101	108	Severe	Profuse cavernous.	82	Occa.	...	80	Slightly improved	Grown worse.
144	2300	101.8	114	Severe	Profuse cavernous	130	Frequent	...	126	Vesical tuberculo., sepsis	3.5	98.3	120	Slight	Mod. muco-pur	80	None	...	..	Improved	" "
145	2302	102.6	100	Severe	Profuse cavernous	40	Occasional	145	121	None	2	99	86	Slight	Slight mucous	15	None	185	133	None	Greatly improved.
146	2306	103	120	Severe	Profuse stinking	10	Every night	115	128	Sepsis	5	...	...	...	...	...	...	...	...	Grew worse	Died.
147	2307	99.4	96	Severe	Profuse cavernous	316	Occasional	110	124	Adv. tubercular laryngitis	6	101	112	Less	Mod. cavernous	376	Occa.	100	120	Better	Grown worse.
148	2310	100	108	Severe	Mod. cavernous	1107	Occasional	90	106	None	4	101	116	Severe	Profuse cavernous.	8000	Occa.	...	100	None	" "
149	2320	101	100	Severe	Profuse cavernous	231	Frequent	130	123	Albuminuria (creosote)	3.5	98.3	80	Slight.	Slight muco-pur	47	None	190	136	Disappeared	Greatly improved.
150	2321	101.2	90	Severe	Profuse cavernous	54	Every night	100	108	Sepsis	1.5	101	100	Severe	Profuse cavernous	1128	Freq.	100	100	Continued	Grown worse.
151	2328	102	112	Severe	Moderate purulent	150	Every night	...	140	Sepsis, tuberc. laryngitis	6	100	116	Mod.	Profuse purulent	226	Freq.	...	116	Sepsis improved	" "
152	2331	103	92	Severe	Moderate purulent	412	Frequent	...	125	Sepsis	3	101	112	Mod.	Mod. muco-pur	90	Occa.	...	120	Grew worse	" "
153	2332	103.6	120	Constant hack'g	Slight mucous	0	Frequent	60	100	Acute dissem., anemia	4	99	96	Slight	Slight mucous	0	None	...	112	Disappeared	Apparently recovered.
154	2339	103.2	126	Slight	Slight mucous	745	Occasional	180	145	Acute dissem., diarrhea	2.5	98.2	80	None	None	0	None	210	150	Disappeared	" "
155	2347	103.2	120	Severe	Mod. muco-pur	172	Occasional	140	129	Acute dissemination	3.5	98.2	100	Slight.	Slight mucous	3	None	180	144	Controlled	Greatly improved.
156	2350	103.4	100	Severe	Mod. cavernous	3336	Every night	...	133	Acute dissem., tub. laryn	4.5	100	120	Mod.	Mod. cavernous	ad inf	Occa.	...	102	Continued	Grown worse.
157	2367	102.4	108	Severe	Moderate purulent	63	Frequent	130	138	Sepsis	6	100	104	Slight.	Slight muco-pur	66	None	170	144.5	Improved	Improved.
158	2375	104	140	Constant hack'g	Mod. muco-pur	624	Frequent	80	100	Acute dissemination	4.5	98	88	None.	None	0	None	190	135	Disappeared	Apparently recovered.
159	2386	101	90	Severe	Profuse purulent	0	Every night	70	116	Sepsis	1	102	80	Severe	Profuse purulent	ad inf	Freq.	...	118	No change	Not improved.
160	2398	101	100	Moderate	Mod. cavernous	3616	Occasional	90	120	Sepsis, albuminuria	4	101	90	Slight.	Mod. cavernous	376	Occa.	90	120	Slightly improved	Improved.
161	2399	99.8	96	Moderate	Moderate purulent	288	Occasional	70	95	Sepsis	3	101	106	Mod.	Mod. cavernous	714	None	...	99	Not improved	"
162	2420	103	108	Severe	Profuse purulent	0	Every night	..	90	Sepsis	2	100.8	96	Mod.	Mod. cavernous	1	None	...	100	Improved	"
163	2401	101	106	Severe	Profuse purulent	280	None	90	122	Sepsis	2	99	80	Mod.	Mod. muco-pur	40	None	...	134	Disappeared	Greatly improved.
164	2411	101.8	102	Severe	Profuse muco-pur	ad inf.	Every night	50	130	Sepsis, tuberc. diarrhea	2.5	..	..	..	..	ad inf	Freq.	...	...	Grew worse	Died.
165	2416	99.6	108	Moderate	Mod. muco-pur	20	Frequent	50	111	Chronic gastritis	4	99	86	Mod.	Slight mucous	0	None	90	133	Cured	Greatly improved.
166	2422	101.6	102	Severe	Profuse purulent	2672	Frequent	90	122	Sepsis, tuberc. laryngitis	4	100.4	112	Severe	Profuse purulent	1600	Freq	...	111	Grew worse	Grown worse.
167	2430	99.4	112	Severe	Profuse muco-pur	88	Occasional	160	120	Chronic gastritis, anemia	2	99	90	Slight.	Moderate mucous	0	None	160	139	Much improved	Greatly improved.
168	2443	100.3	112	Moderate	Moderate purulent	978	Occasional	90	105	Rectal fistula	5.5	98	88	Slight.	Slight mucous	62	None	130	127.5	Cured	Dis. arrested; improved.
169	2454	102	120	Moderate	Profuse cavernous	204	Frequent	65	135	None	2	99.2	84	Slight.	Slight muco-pur	82	None	150	135	None	Improved.
170	2457	101	96	Severe	Profuse cavernous	428	Frequent	124	145	Sepsis, anemia	2	101	90	Mod.	Mod. cavernous	1912	Occa.	...	125.5	Same	Not improved.
171	2455	101	108	Severe	Profuse purulent	750	Every night	82	55	Sepsis	2	...	...	...	Profuse purulent	2124	...	...	...	Grew worse	Died.
172	2462	101.2	112	Severe	Profuse purulent	1296	Frequent	...	104	Sepsis	3	101.4	90	Mod.	Profuse purulent	556	None	...	105	Same	Not improved.
173	2468	102	102	Severe	Profuse muco-pur	6614	Frequent	..	88.5	Tub. larynx, tub. diarrhea	5	101	90	Mod.	Slight muco-pur	1076	None	...	88	Improved	Improved.
174	2480	101.2	90	Severe	Mod. muco-pur	1146	Frequent	90	122	Tubercular laryngitis	4.5	103	115	Severe	Profuse muco-pur	ad inf	Occa.	90	115	Grew worse	Grown worse.
175	2483	100.5	104	Moderate	Mod. cavernous	294	Occasional	100	100	None	1	98.3	100	Slight	Slight muco-pur	130	None	110	104	None	Improved.
176	2487	101.2	112	Constant, severe	Slight muco-pur	142	Every night	100	109.5	Sepsis, tuberc. laryngitis	5.5	98.3	84	Slight.	Slight mucous	0	None	90	124	Cured	Dis. arrested; improved.
177	2489	102	112	Severe	Profuse purulent	378	Frequent	95	113.5	Sepsis, gastric catarrh	2	98	100	Slight.	Slight muco-pur	150	None	105	126	Disappeared	" " "
178	2490	103.5	100	Severe	Profuse purulent	1726	Frequent	160	124	Sepsis	3.5	98.3	76	Slight.	Slight mucous	1	None	200	141	Disappeared	" "
179	2494	99.2	90	Severe	Profuse cavernous	1616	None	120	112	None	2.5	98.2	96	Slight	Slight muco-pur	358	None	130	118	None	Greatly improved.
180	2499	103	96	Severe	Profuse muco-pur		Frequent	70	95.5	Tub. periton., diarrhea	3.5	102.3	112	Slight.	Slight muco-pur	11	None	...	90	Grew worse	Grown worse.
181	2501	103.2	118	Severe	Profuse purulent	402	Every night	...	...	Sepsis, tuberc. diarrhea	1	102.1	100	Mod.	Mod. muco-pur	1156	Occa.	...	...	Same	"
182	2506	103.8	114	Severe	Profuse muco-pur	526	Frequent	75	133	Sepsis, thoracic fistula	6	98	80	Slight.	None	0	None	130	138.5	Greatly improved	Dis. arrested; improved.

RECAPITULATION OF RESULTS.

Class.	No. of Cases treated.	Apparently Recovered.		Disease Arrested; Greatly Improved.		Improved.		Not Improved.		Grown Worse or Died.		Corresponding to
		No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.	
A	32	26	81	5	16	1	3	0	0	0	0	Early stage.
B	74	26	35 1	25	34	17	23	3	4	3	4	Middle stage.
C	76	7	9	26	34.2	11	14.4	3	4	29	38.4	Last stage.
Total (all cases)	182	59	32.4	56	30.8	29	16	6	3.3	32	17.5	All stages.

This report is, however, not made with the view of convincing my hearers of the great value of one particular remedy employed, and I am fully aware that a variety of favorable influences has contributed to these results. I believe that in the estimation of the value of any one of them, the degree of benefit obtained is a matter of judgment on the part of the observer, and cannot be shown by results in individual picked cases; but I believe also that from a series of cases like the present some inferences are justifiable.

To cite an instance, I beg to refer to case No. 27, where the temperature became normal, the vital capacity was increased from 90 to 140 cubic inches, and the weight from 87 to 98 lbs., and during the two and a half months that this patient was under treatment the tubercular peritonitis and diarrhea disappeared. A partial observer might attribute this result entirely to the use of antiphthisin. We know, however, that a tubercular peritonitis is subject to exacerbations and periods of comparative quiescence, and we can conceive that the local manifestations reached the latter stage during the period while the remedy was employed; in such cases the temperature would naturally subside, and with an improvement in this respect, as well as the disappearance of the diarrhea, the appetite would improve and weight would increase. Part of the difference in the vital capacity was undoubtedly due to the abdominal pain and general weakness which were present when the first trial on the spirometer was made, and which were absent on the patient's discharge; this patient could not and did not show the full vital capacity of his lungs at the time of admission. There was, however, also relative percussion dullness over one upper lobe, with broncho-vesicular respiration and fine crepitant râles over the affected area, and in this case as in many others herein reported these physical signs practically disappeared—a result which it would be a strained explanation to refer to the subsidence of the abdominal symptoms, the absence of fever, or the improved nutrition of the patient.

In thus critically examining this case, the same as I have examined all others, I simply wish to show how careful one must be for the avoidance of hasty conclusions on the one hand, and for the requirement of a large series of cases and of longer periods of observation on the other.

In the same line of reasoning, adverse conclusions would be equally wrong, should the observer, for instance, be so unfortunate as to have for his clinical material only a short series of cases, as appear in "Class C" from No. 126 to No. 131 inclusive; all of these six cases grew worse, and yet on their admission I had hoped for some improvement.

Such cases simply demonstrate the limitations of all the means at our command, and the inability of the observer to fully appreciate beforehand that which becomes a plain fact when the trial is over. Such is, however, the case with all our therapeutical resources, and we are not, nor are we ever likely to be, in possession of such remedies and such foresight and good judgment as will enable us to always obtain the desired or expected results.

As for the failure of antiphthisin in these six consecutive cases and in others in combination with every other means employed, while I regret the outcome, I certainly made a painstaking trial.

In every instance I explained to the patient or to his or her friends my position and the doubtful character of the prospects, and I am content in the knowledge that the means and remedies employed, including antiphthisin, have not only done no harm, but have contributed to the comfort of these patients both moral and physical, in maintaining hope and relieving distressing symptoms to the end.

Speaking of my results in general, they

offer me much satisfaction. Undoubtedly some of the apparently cured and improved cases will eventually prove to have been erroneously reported—indeed, a few of the advanced cases have already relapsed and have required further treatment, but this is the case with all clinical results, and must be looked for in so serious an affection as advanced phthisis.

In the majority of reported cases a year and over has passed since their discharge, without serious relapse, thereby comparing most favorably with results obtained from climatic and dietetic treatment alone when the patients are allowed to return to their previous environments, as has been the case in all the discharged cases of this report. So far as I am acquainted with the statistics upon the disease under consideration, the present series of cases shows much better results than any heretofore obtained either in this country or in Europe.

It is therefore quite logical to conclude that the treatment with antiphthisin has materially contributed to the results obtained; and this is corroborated by the experience of several hundreds of other observers, who have also used the remedy within the past fifteen months, but especially by the experience of those who have applied it without the advantages of a favorable climate, with less experience in the management of such cases, and without the advantage of a well conducted special institution.

Several of those who have used the remedy for a longer period or upon a series of cases have already published their results,* while others have reported directly to me, all agreeing that the remedy has caused no unpleasant symptoms and is safe in the hands of a careful physician, and that the results obtained justify the claims made for it by Professor Klebs and myself in our previous publications.†

Under these circumstances we believe ourselves justified in taking steps toward a more general trial by the profession, by the production in our laboratory of larger quantities of the remedy, and also with a view of making it cheaper, while I shall still maintain my request upon physicians who contemplate its use for the first time, to furnish me with a clinical history and statement of the present condition of the patients to be treated, and to allow me to aid them with such directions and advice as I can give as the result of my greater experience in its application.

I believe, however, that the time has not yet come when antiphthisin may properly be put upon the market for indiscriminate sale, and by which even patients could obtain it for self-administration. Such a course, while undoubtedly assuring a larger demand, would seem to me to jeopardize the ultimate standing of what appears to me now to be the most valuable remedy at our command.

In the administration, a full clinical record, and observation of symptoms for several days previous, should be made. This should include a written record of temperature, pulse, and respiration, taken every three or four hours while the patient is awake; it should also include a microscopical examination of the sputum, and if a high-power immersion lens (at least one-twelfth) is available, the form of tubercle bacilli should be observed. Under the use of antiphthisin, it has been observed by Professor Klebs, myself, and others, that the bacilli become granular and of dumb-bell forms, appear more and more in fragments, and take the stain imperfectly, especially in sputum that has not the characteristics of having come from a cavity.

The remedy keeps in ordinary temperatures and with ordinary care. It may be given hypodermically or by the rectum. Inhalations of antiphthisin are now being tried in our Sanitarium.

Hypodermic administration frequently causes local irritation and erythema, sometimes distinct swelling and painfulness of the part, with rise of temperature, and this under the most painstaking asepsis. I have, however, never seen suppuration; on the contrary, the irritation subsides in twenty-four to forty-eight hours, and in all but very few cases these local effects lasted only for the first week or ten days. In all such cases the administration per rectum may be substituted, but the doses require to be slightly larger; the clinical results have been equally satisfactory.

As a rule, the beginning dose for adults should be one-tenth of a cubic centimeter, and this should be increased from day to day

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* Taylor: Transactions American Climatological Association, 1895. Dennison: *New York Medical Journal*, July 20, 1895. Ambler: *Medical Record* (New York), Feb. 8, 1896. Barbour: *Medical News*, Feb. 22, 1896. Report of the New Orleans Commission for the Investigation of Antiphthisin, made to the Parish Medical Society of New Orleans, March 28, 1896.

† Klebs: Tuberculose. Lepolde Voss, Leipzig, 1894. Von Ruck: *New York Medical Journal*, 1892. Von Ruck: THERAPEUTIC GAZETTE, March, 1895. Klebs: *Journal of the American Medical Association*, April 2, 1895.

by 0.1 Cc. until half a cubic centimeter is reached. This dose may be continued for several days, or a week, and again increased by tenths as before. Arriving at one cubic centimeter it is well to continue at this figure for a week or more, and when distinct improvement is manifest, as is usually the case, the dose may be maintained for a longer time. It is rarely necessary to exceed two cubic centimeters, although I have found much larger doses to be well borne and to cause no unpleasant symptoms.

The remedy is continued in doses of one to two cubic centimeters, according to the results obtained and the nature and stage of the case, for several months, when an intermission may be taken, especially if the results obtained are such as to indicate entire arrest of the tubercular process. But even in such cases, and in those where all symptoms have disappeared, it is wise to repeat a series of injections after intervals of one or more months, in the meanwhile keeping the patient under observation.

Too rapid increase of doses, especially in cases where the tuberculosis is extensive or disseminated, and in so-called erethetic cases, may be attended with a rise of temperature. If an unusual rise of temperature be suspected as having relation to the remedy, a few days' intermission will show the justification of the suspicion, or otherwise, and in the former instance smaller doses should thereafter be given, and more gradually increased than before.

I have seen only one case in which I had reason to believe that an increase of temperature was due to antiphthisin, and even in this case the evidence was not absolutely conclusive. No harm resulted, and the patient made a good recovery under doses of two cubic centimeters.

In laryngeal tuberculosis I have also applied antiphthisin locally the same as we would use lactic acid, and while in advanced cases it has failed, as did all other remedies, in the milder cases I have had very satisfactory results.

In tubercular affections of the middle ear, with perforation of the drumhead, I have applied antiphthisin locally after thoroughly cleansing the part, and in the few cases treated I have had a rapidly satisfactory result.

It is hardly necessary to add that the patient's general and dietetic management, and his general supervision, the proper treatment of complications, etc, should be most painstakingly carried out, and that the use of antiphthisin does not contra-indicate any other rational aid which experience has shown to be of value in our efforts to obtain a cure.

As one of these aids I would especially recommend the "rest treatment" in all cases which show elevation of temperature above 100°, allowing moderate exercise only during hours when the patient is free from fever.

One of the earlier effects of the remedy is an increase in the expectoration, and frequently an increase in the number of tubercle bacilli therein contained. I have witnessed this as a rule under small doses and within the first few weeks, after which the expectoration became less and was of a less purulent character.

Another effect which from my observation stands in relation to the remedy is more freedom in respiration, less dyspnea on exertion, and relief of oppression in the chest. Along with this I have, as a rule, been able to demonstrate subsidence of râles and a better percussion note. In non-complicated cases the fever subsides, the pulse becomes slower and of better quality, and the patient gains in weight and strength, while subjective and objective symptoms continue to improve under a gradual increase of the dose.

In the use of this remedy the physician must not forget that in the patients who apply to us for treatment, we have often something more to deal with than pure tuberculosis; more or less serious complications may be present, incidental or representing degenerative processes—results of the tuberculosis,—which the remedy may be unable to overcome. But even in such, the organism has a better chance to repair and to overcome the effects produced by the advancing disease, when the latter has been checked and the purely tubercular processes have been arrested. In other instances, of which we see many examples in "Class C" of this report, the damage is irreparable, the complications irremovable, the recuperative power of the organism lost, and the final outcome is necessarily a failure.

With further accumulating experience with this remedy, the time will come when we can form a more accurate judgment of its value and of the proper selection of cases for its employment; in the meantime it is gratifying to know that the remedy is safe in the hands of an intelligent physician, and that as good results can be obtained under its use as I and others have shown.

THE SURGICAL TECHNIQUE OF DR. J. WILLIAM WHITE'S CLINIC IN THE UNIVERSITY OF PENNSYLVANIA.

By Ellwood R. Kirby, M.D.,

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The surgeon of to-day, while eschewing the use of powerful antiseptic applications to healthy raw surfaces, none the less pins his whole faith, in so far as the prevention of sepsis goes, to the thorough disinfection, by a preliminary application of antiseptics, of hands, instruments, wound area, sponges, dressings—whatever is liable to come in direct or indirect contact with an open wound. Hence while the operation may be—indeed, should be—aseptic, the use of this term should not imply the abolition of heat, phenol, bichloride, and other less potent, hence less popular, germicides.

In describing the technique as carried out in the University Hospital by Dr. White, I shall consider the subject under the following headings:

1. The preparatory treatment of the patient.
2. The operating-room.
3. Surgeon, assistants, and nurses.
4. Instruments, ligatures, sutures, gauze, sponges, dressings, etc.
5. Basins, trays, jars, etc.

I. THE PREPARATION OF THE PATIENT.

In all cases, except where operative treatment is immediately demanded and in certain minor surgical cases used for ward class-instruction, the patients are subjected to a preparatory treatment for not less than twenty-four hours, while in more serious cases from three days to a week may be consumed in this treatment.

This treatment consists of rest, bathing, care of the bowels, regulation of the diet, and special antiseptic preparations before the operation. During the time the patient is thus being prepared, a careful examination is made of the lungs and heart, and a chemical and microscopical examination of the urine. The patient is given a warm bath daily to quicken the action of the skin. The bowels are well moved every day, and eighteen to twenty-four hours before the operation a brisk purgative is given consisting of half an ounce of Rochelle salts, or of enough completely to empty the intestines. On the morning of the operation a simple soap-and-water high enema is also given. The diet is regulated according to the condition of the patient. On the morning of the operation a glass of milk or a cup of tea, coffee, or bouillon, with a small piece of toast, is all that is allowed.

Special Antiseptic Preparations immediately before the operation.—A general bath is given on the morning of the day of operation, and, unless contra-indicated, considerable friction is made over the part to be operated upon. This region is then thoroughly scrubbed for from five to ten minutes with tincture of green soap and hot water, thoroughly dried, and freely rubbed with a sterilized towel. The surface is next bathed with alcohol, then with a solution of carbolic acid 1:40, and finally with a solution of bichloride of mercury 1:1000. The part is then covered with a large wet towel wrung out of 1:40 carbolic in 1:1000 bichloride solution, and the towel is held in place by an antiseptic bandage.

When the patient is put upon the operating-table, mackintoshes are placed around the part to be operated upon, and these are covered with sterilized towels (steam). The dressing is then removed and an assistant thoroughly cleanses the operative region, first with alcohol, next with carbolic acid solution 1:40, and finally with bichloride solution 1:1000. The towels, that have been placed over the mackintoshes during this secondary process of cleansing, are now replaced by fresh sterilized towels, and the region is ready for operation.

Minor surgical cases and those requiring immediate operation are prepared as above described, excepting that the general baths and the laxatives and purgatives must be omitted.

II. THE OPERATING-ROOM.

When operating in a large clinic room, as it is at present necessary to do in the University Hospital, the details of antisepsis cannot be carried out as regards the entire room. All that part of the room within the limits of the so-called "pit" is thoroughly scrubbed with soap and water before the operations. Tables, shelves, etc., are scrubbed in the same manner, and are then covered with large sheets wet with 1:1000 bichloride solution. All utensils, such as basins, pitchers, glass dishes, trays, etc., are first thoroughly scrubbed with soap and hot water, and then washed freely with 1:1000 bichloride solution; all articles made of tin are immersed in a 1:20 solution of carbolic acid.

Syringes, glass dishes (for ligatures, sutures, needles, etc.), are kept in a solution of bichloride, 1:1000, for three or four hours before an operation.

All brushes for the use of the operator in scrubbing his hands are first thoroughly boiled in ordinary water for ten minutes, and then kept in small dishes filled with 1:20 carbolic in 1:500 bichloride solution.

III. SURGEON, ASSISTANTS, AND NURSES.

General personal cleanliness, enforced by frequent bathing, clean linen, and fresh clothes, is consistently and constantly maintained.

The surgeon and all assistants and nurses wear washed linen suits, put on clean every operating day.

The most important of all preparatory procedures is the active cleansing of the hands and forearms immediately preceding the operation. These are thoroughly scrubbed with tincture of green soap and hot water for from five to ten minutes. The nails are scrubbed with special care until they present a clean white subungual space. The hands and forearms are now washed in alcohol to remove all fat or grease from the skin, and a nail-cleaner (previously boiled and kept in alcohol) is used to remove all remaining substances from the subungual and periungual spaces. Carbolic-acid solution 1:40 is then freely used, and finally 1:1000 bichloride solution.

If the operator's hands should accidentally or intentionally come in contact with substances that are clean, but not surgically so, it is only necessary to repeat the bathing with alcohol, carbolic and sublimate solutions; otherwise the hands must be as thoroughly scrubbed again as in the first preparation.

Just before the incision is made, the operator, his assistants and nurses put on large gowns, taken directly from the sterilizer, extending from the neck to the feet, and with sleeves tied just above the elbow. These gowns have been sterilized on three consecutive days—three hours on the first day, two hours on the second, and one hour on the third.

The nurses handle all basins, pitchers, jars, etc., with towels wet with 1:1000 bichloride solution; and all instruments which cannot be thoroughly sterilized, such as cauteries, are handed to the operator surrounded by a towel wet with 1:1000 bichloride solution.

IV. INSTRUMENTS, LIGATURES, SUTURES, GAUZE, SPONGES, AND DRESSINGS.

All instruments, after an operation, are washed thoroughly in soap and hot water, then boiled for at least five minutes in a one-per-cent. carbonate-of-soda solution, then dried and placed in the cases.

When preparing for an operation, the proper instruments are selected from the case, and boiled for at least twenty minutes in a one-per-cent. solution of carbonate of soda. The knives are an exception to this rule; they are boiled for five minutes only, because, either from heat or chemical changes, prolonged boiling rapidly destroys the cutting edge.

The instruments are taken from the boiling soda solution with sterilized forceps, and placed in trays on sterilized towels. The tray is then filled with cold carbolic acid solution 1:20, and covered with a towel wet with the same solution. Just before the instruments are to be used, the carbolic solution is weakened, by the addition of sterilized water, to a strength of 1:80.

If it be necessary to use an instrument which has become contaminated—as, for instance, by dropping on the floor—all blood, etc., must be removed with hot water, soap and brush, and the instrument committed to the boiling soda solution for at least five minutes, and then covered with alcohol and "flamed off" by the ignition of the latter; it is then again ready for use.

During the operation, hemorrhage is most carefully controlled with sponges or gauze pads, which are freed from blood in what is called in the Hospital "White's standard solution," which is a mixture of bichloride of mercury 1:4000 and carbolic acid 1:100. When necessary the wound is flushed with this same standard solution. After all hemorrhage has been controlled either by ligature or torsion, a final flushing with the standard solution is given to remove all clots; when necessary, appropriate drains are used; the wound is closed, and the following dressing applied:

1. Dusting with iodoform (sterilized by steam).

2. Iodoform gauze or sterilized gauze, or both.

3. Bichloride cotton, or plain absorbent cotton that has been sterilized by steam.

4. Sterilized bandage.

Ligatures and Sutures.—Silk, silkworm-gut and catgut are used, and are prepared as follows:

Silk and silkworm-gut are wound on glass reels, and boiled for fifteen minutes in ordinary water; they are then placed in a sterilized glass jar of pure alcohol; the jar and its contents are placed in a water bath, and boiled for three successive days—three hours the first day, two the second, and one hour the third day; finally, the silk and silkworm-gut are boiled one hour before operation.

Catgut ligatures are first cut in lengths of twelve inches, sutures in lengths of twenty-four inches. They are then put in ether for forty-eight hours, and finally preserved in an ethereal solution of bichloride of mercury 1:1000. This solution must be renewed weekly.

Chromicized gut is prepared by placing the material in ether for forty-eight hours, then in a five-per-cent. solution of carbolic acid to which is added pure chromic acid in the proportion of 1:4000. The gut is kept in this solution for forty-eight hours, and finally preserved in pure alcohol.

Just before operation, such ligatures and sutures as will probably be required are removed from their respective jars with sterilized forceps, placed in pure alcohol in sterilized compartment trays, and covered with a steam-sterilized towel or one wet with 1:1000 bichloride solution. The nurse always makes use of a towel wet with bichloride solution 1:1000 to remove the glass tops from the jars.

Ligatures and sutures removed from their jars but not used must again be prepared as above described before they can be put back into the stock jars.

Drainage Tubes.—Rubber tubes are boiled for fifteen minutes in plain water, and are then stored in sterile jars containing 1:1000 bichloride solution. This solution must be renewed weekly. Glass tubes simply require boiling for twenty minutes in the soda solution, and may be placed in alcohol or in carbolic-acid solution 1:80 until required.

Sponges.—These are first pounded to free them from dust and sand, next well washed in ordinary water, and then placed in a solution of hydrochloric acid, f ℥ ij to the gallon of water, where they remain for from twelve to twenty-four hours. From this point, the further handling of the sponges must be with surgically clean hands. After being washed freely in water until all the acid has been removed, the sponges are placed in a solution of permanganate of potassium, ℥ ij to the gallon of water, for ten minutes, then freed from the excess of permanganate, and thrown into a solution of—

Hydrochloric acid, f℥ ij;
Hyposulphite of sodium, ℥ j;
Water, 1 gallon.

As soon as they are bleached they are quickly removed and washed in plain distilled water until free from acid; they are then stored in large sterile jars in a solution of 1:20 carbolic in 1:1000 bichloride.

All sponges which have been used once are destroyed.

Dressings, Pads, Towels, and Aprons.—These are all sterilized in the Arnold apparatus for at least two successive days—three hours on the first day, two on the second, and, when time permits, one hour on a third day. The sterilizer is not to be opened until the articles it contains are required.

Each dressing of white gauze, twelve to twenty-four layers, is cut to fit before the operation, and, with a gauze bandage of proper size, is made up into a package with a clean towel and labeled, before being placed in the sterilizer.

The towels to be used for each operation are done up in packages of six, and the sheets for surrounding the part to be operated upon in packages of three.

Catheters, Sounds, etc.—Rubber catheters are boiled for five minutes in plain water, and kept in boric-acid solution, grs. xv to the fluidounce, until ready to be used. Metal catheters and sounds are boiled for fifteen minutes in the soda solution both before and after using, and kept in sterilized towels until ready for use.

If there is not sufficient time for boiling—as is often the case with urethral instruments—the instruments may be covered with alcohol and the latter ignited and allowed to burn off.

Filiform bougies are placed in carbolic-acid solution 1:100. They become absolutely useless if treated by boiling or by soaking in solutions of too great strength. It seems likely that the employment of formalin will in the future modify the method of keeping the urethral instruments sterile.

Safety-pins, needles, wire, etc., are all boiled in the soda solution for fifteen minutes, and either left there or kept in alcohol until required.

Rubber dam is boiled in plain water for five minutes, and kept in bichloride solution 1:1000 until needed.

The Esmarch band and rule are rendered

antiseptic by immersion in carbolic-acid solution 1:30.

Iodoform gauze is prepared as follows: Ordinary white gauze, cut in pieces of ½ × ¾ yard, is sterilized for three consecutive days —three hours on the first day, two hours on the second, and one hour on the third. A normal salt solution, with sufficient soap added to make a lather, is boiled for twenty minutes, then covered with a bichloride (1:1000) towel, and allowed to cool. The table on which the gauze is manipulated, and all the required utensils, are thoroughly scrubbed with soap and water, and then washed with bichloride solution 1:500. The table is now covered with large sheets wet with bichloride solution 1:500, and the basins are washed with distilled water to free them from the bichloride solution used in their preliminary cleansing. To every quart of the now cool soap-and-salt solution, four ounces of iodoform powder are added. The gauze is removed from the sterilizer, placed in the mixture, and thoroughly manipulated by surgically clean hands. The excess of liquid is squeezed from the gauze, and the latter is folded into small packages and wrapped up in wax-paper which has been rendered aseptic by immersion in 1:40 carbolic-acid solution. These packages are preserved in sterile jars. Before operation, as many packages as are thought to be necessary are placed in the steam sterilizer along with the other dressings.

Stock gauze is prepared as follows: The cheesecloth is first boiled in ordinary water for three hours, and allowed to cool. Then, with surgically clean hands, the excess of water is wrung out and the gauze is placed in a solution of bichloride of mercury 1:3000, and allowed to stand for one hour. It is not freed from the excess of bichloride solution, but is placed in a large sterile basin, and the whole is surrounded by a large sheet wet with 1:1000 bichloride solution. The gauze is now taken to a large sterile room, where it is hung on clothes-lines made of bandages which have been boiled and rendered antiseptic by 1:3000 bichloride solution. When dry the gauze is packed away in large sterile jars.

All jars are thoroughly washed with soap and hot water, and filled with 1:1000 bichloride solution and allowed to stand over night.

Bandages are made of ordinary white gauze, and are sterilized by steam, along with the dressings.

Iodoform powder for dusting purposes is placed in an ordinary wooden pill-box and covered with a piece of cheesecloth which acts as a sieve. The box and all are sterilized together with the dressings.

Hypodermic Syringes.—The needle is boiled in ordinary water for five or ten minutes, and kept in alcohol. The syringe is well washed with carbolic-acid solution 1:40, freed from the carbolic acid by means of distilled water, and kept in alcohol.

Before giving an injection, the skin is thoroughly cleansed with alcohol.

SOMATOSE.

H. TAUBE (*Belge Médicale*, Jan. 2, 1896) calls attention to somatose and reports three cases in which it achieved excellent results.

A youth, long treated for an obstinate syphilide, and finally cured of this by energetic treatment with iodide of potassium and intramuscular injections of calomel, had become cachectic to an extreme degree. Mercurial stomatitis and salivation rendered for the time all alimentation impossible. Milk and ordinary peptones were not borne, and increased the distaste for food and the diarrhea. Rapid recovery in every respect ensued with soups, gelatinous and farinaceous, to which somatose, ten grains per day, had been added.

A woman was suffering from pericarditis entailed by acute articular rheumatism. The great prostration, feebleness of pulse, etc., forced the administration of tonics even during the acute stage. Wine, brandy, and somatose, the latter mixed with beef-tea, were given. Her strength then markedly improved, even during the rather long period which the exudate took for resorption, and during which digitalis and potassium acetate were given and fly-blisters applied to the chest.

Case 3 was that of a woman become anemic through repeated pregnancies, in whom at the fifth month of lactation the secretion failed, and lancinating pains in the breasts and back appeared. The infant, placed on diluted cow's milk, was soon reduced to an extremely low state through dyspeptic diarrhea, followed by bronchitic signs, cough, fever, inspiratory dyspnea, vomiting, albuminuria, etc. Somatose given to the mother in milk and farinaceous soups caused speedy disappearance of the pains and return of breast secretion. The infant, from the day of its resumption of the natural food, hastened to recovery.—*British Medical Journal*, Feb. 29, 1896.

The Therapeutic Gazette

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Leading Articles.

THE AFTER-EFFECTS OF OPIUM OR ITS DERIVATIVES AND OTHER HYPNOTIC SUBSTANCES.

There is no doubt that in opium and its derivatives the medical profession possess drugs which on the one hand are of the greatest benefit to mankind, and on the other often prove a source of much suffering, discomfort, and ill-health. In the presence of agonizing pain which no other remedy but a general anesthetic can relieve, opium or its alkaloid morphine still maintains, and perhaps always will maintain, the foremost place in our materia medica list as a source of relief. Yet the most experienced physicians realize the fact that in many instances they are prevented from administering it, by reason of the fear that its after-effects will cause the patient to consider the remedy worse than the disease. These after effects, which consist in profound depression, nausea, vomiting, and general malaise, often last much longer than the attack of pain would have lasted had opium not been given, and in very susceptible persons, particularly in nervous women, they may be so severe as to be positively alarming. Then, again, every physician constantly has before him, when about to prescribe opium, the possibility that his hypodermic injection of morphine may be the first impulse toward the development of that curse of the human race, the morphine habit, and as a general rule the morphine *habitué* tells us that the first doses of the drug which he received were given under the directions of his attending physician.

If because of the severity of pain the physician decides that it is necessary to administer opium or morphine for the production of sleep, the next point of interest to him is the method which he should resort to for the treatment of the after-effects which will appear within twelve or twenty-four hours. In the first place he should remember that, according to a number of experiments and clinical researches both in this country and abroad, some of which have been published in the THERAPEUTIC GAZETTE, morphine is eliminated by the stomach, and from this organ reabsorbed into the system. In other words, a dose of morphine having been given hypodermically, the gastric fluids soon contain it, and if they are not vomited the morphine is once more absorbed, only to be a second time eliminated. For this reason it is well, when the nausea of the after-effects of opium develops, to encourage rather than discourage the act of vomiting (unless it becomes excessive), as in this way the patient is enabled to rid his system of the material which is producing his discomfort. Often it is advantageous to give him warm water or other liquid, by means of which he can wash out his stomach in the act of vomiting. After vomiting has taken place it remains for the physician to overcome the condition of nervous depression, and to remove the nausea which probably depends to a large extent upon some influence of the drug upon the vomiting centre. For this purpose there is no better remedy than a cup of strong black coffee taken as hot as the patient can swallow it in teaspoonful doses, followed in the course of fifteen to twenty minutes by another cup, and this in an hour or two by one or two teaspoonfuls of the elixir of celery and guarana. Should these stimulants produce much nervous excitement, their action upon reflex activity can be decreased by the use of small doses of the bromides, which will also tend to remove some of the symptoms produced by the opiate.

It is also important that any tendency to

constipation shall be relieved by the use of some saline cathartic, that the kidneys be flushed by frequent drinking of small quantities of some one of the mild diuretic mineral waters, and that all foods containing milk be avoided, beef-jelly, made into beef-tea, or broths being employed to the exclusion of milk preparations.

It is unfortunately true that nearly all of the so-called hypnotic or somnifacient drugs which have been introduced into medicine within the last twenty years also produce after-effects which frequently hinder the physician from administering them when they are otherwise indicated. This is particularly true of such remedies as sulphonal and trional, which not only act very slowly in some cases, but which prolong their action, in a half-hearted way, for many hours after the true sleep which they have produced has passed by. It is by no means uncommon, when either of these remedies has been given for insomnia in the evening, to find that the patient has slept heavily during the night, and when the physician sees him in the morning he is neither asleep nor awake, conscious of everything that is going on around him and yet in an uncomfortable state of semi-consciousness and lassitude. If walking is attempted, the patient finds that his gait is somewhat ataxic. He is apt to stagger if he stands still, with his eyes shut and his feet close together, and any mental effort is practically impossible. Under these circumstances we have found that the best treatment is once more the administration of one or two cups of strong black coffee, followed if necessary by the elixir of guarana and celery.

THE UNITED STATES PHARMACOPŒIA AND THE QUESTION OF DOSAGE.

Although it is about four years before the next Convention for the Revision of the U. S. Pharmacopœia will convene at Washington, it is perhaps not too early to begin the agitation of certain important points in connection with the work of that meeting. One of these, which has possessed considerable interest to us for a number of years, is the question of introducing into the Pharmacopœia a statement of the dosage of the various preparations therein official. It has seemed to us, from a very considerable experience and observation, that it is quite as necessary that there should be some authoritative guide as to the average dose of well known medicines as that there should be a guide for the manufacture and preparation of pharmaceutical products.

As a matter of fact the U. S. Pharmacopœia occupies no authoritative position outside of that which may be accorded to it by custom or by the laws of individual States which have happened to designate it as the standard for their resident pharmacists; and for this reason there can be no objection, in our opinion, to the statement of the average maximum or minimum dose or of the medium dose in connection with each one of the official drugs, since the statement would be a suggestion, not a law.

It is quite true that the dose of the remedy varies, or ought to vary, with the individual to whom it is to be administered, and there is nothing which should be more frowned upon than the employment of identical doses in every case of a given disease which the physician meets. On the other hand, it certainly would be advantageous both for the druggist and the physician if a body of representative physicians and pharmacists, such as that composing the Convention for the Revision of the Pharmacopœia, would prepare a list of doses which would be at least approximate. Such a list would in no way deprive a physician of the right of prescribing larger or smaller doses if he so desired. There is no law forcing physicians to employ only such preparations as the Pharmacopœia contains, and there would be no obligation upon them to employ the doses which the Pharmacopœia might recommend.

The Committee of Revision could collect the best views as to dosage of various drugs, and there would be an approximate standard raised which would be of value in giving information to druggists and physicians. At the present time a druggist, upon receiving a prescription containing a large dose of any poison, can only determine the question as to whether he can dispense it without injury by referring to one of the dispensatories or other books published by individuals; whereas the Pharmacopœia ought to give him information not only as to the strength of the preparation, but as to the amount which physicians are ordinarily supposed to prescribe.

To meet this difficulty of the average pharmacist, the best manufacturing firms in the United States not only print the constituents of the preparation upon the bottle, but append thereto the ordinary dose in both metric and apothecary's terms.

We trust that the next Convention for the

Revision of the Pharmacopœia will see its way clear to direct its Committee of Revision to take some steps toward the formation of a dose-list; and we note with interest that our opinion in this matter is endorsed by many of the eminent gentlemen connected with the present revision of the Pharmacopœia of Great Britain.

QUININE AMAUROSIS.

Several months ago we called attention, in a leading article in the THERAPEUTIC GAZETTE, to some of the untoward effects produced in the skin by the administration of various remedies intended for the production of a general systemic effect; and still earlier we pointed out in another leading article some of the major untoward effects of quinine, both upon the skin and upon the viscera, including at the same time a discussion of the contra-indications to the use of this alkaloid.

One of the most frequent of the untoward effects of quinine administered in large doses to susceptible persons, is the condition known as quinine amaurosis or amblyopia, the patient becoming partially or completely blind for periods lasting from a few minutes to a number of days.

In the Transactions of the College of Physicians of Philadelphia is a communication from Dr. De Schweinitz in which he details the results of an experimental investigation undertaken by him to determine the lesions which this drug produces in causing blindness, and he concludes from his research that the change consists in peculiar vacuolations of the cells in the cortical centres of vision, and in addition that there is produced, if the administration of the drug is continued long enough, permanent optic atrophy and thrombosis of the central vein of the retina. He also believes that the drug causes local changes in the vessels of the eye—that is, an endo-vasculitis. Still more recently, in De Schweinitz's Alvaren a Prize Essay upon Toxic Amblyopias, the author gives a complete bibliographical summary of all the work which has been done upon this subject, and concludes that, so far as treatment of the ocular lesions is concerned, it is necessary, *first*, that no more quinine, or other cinchona preparation, be administered; *second*, that the inhalation of nitrite of amyl is sometimes of value in this condition; and *third*, that the administration of full doses of strychnine by the hypodermic method is advisable. He also quotes the recommendation of Fox, that full doses of hydrobromic acid be given; and that of Calderai, who has seen iodide of potassium do good in such cases.

In the *British Medical Journal* of March 7, 1896, is an abstract of the report of an interesting case of this character taken from the *Annales d'Oculistique* for January, 1896, in which Demicheri takes occasion, having had a case of marked quinine amblyopia, to point out wherein this condition differs from malarial amblyopia. According to Poncet, the changes met with in the eye as the result of malaria are optic neuritis, peri-papillary edema, extravasation of leucocytes, plugging of retinal and choroidal vessels by pigmented leucocytes, and hence multiple hemorrhages in the fundus; but the existence of such hemorrhages is not always determinable by the ophthalmoscope, only by the microscope. In the pernicious form of malaria the patient may come out of his comatose condition quite blind, the blindness lasting an hour or more. If the loss of vision is persistent, one can always make out fundus changes, as above. In quinine intoxication the loss of vision is very persistent; from the first the whiteness of the disc is noteworthy, and the shrunken condition of the vessels; and these signs are present for years after the visual acuity has been recovered (when as the result of malarial fever there is contraction of the vessels, it is quite fleeting and is limited to the arteries). There are no inflammatory symptoms whatever in the retina or disc. Central vision is the first to recover; the concentric contraction of the fields for white is very persistent; color vision suffers as much as or more than the vision for white. The pathology of the condition is by most believed to be retinal ischemia from vasoconstriction of local or central origin. Prognosis is always more or less favorable, even in cases where electrical excitation has failed to produce any sensation of light. In the way of treatment, Demicheri agrees with De Schweinitz that nitrite of amyl and strychnine are useful remedies, but he also insists that attention to hygiene is important, such as living at a high altitude, exercise, massage, and baths. At the beginning, dorsal decubitus has proved of value.

STERILIZATION OF URETHRAL INSTRUMENTS BY THE VAPORS OF FORMOL.

For some years Guyon, probably the world's first authority in diseases of the bladder, after a trial of all the various well known antisep-

tic agents, has habitually employed sulphurous acid as the surest and least injurious method of sterilizing woven catheters and bougies. Recently Groglik has disputed the thoroughness of such sterilization.

For the purpose of proving anew the reliability of sulphurous acid, Guyon suggested to Janet a series of experiments with infected sounds exposed to sulphurous acid. This agent possesses the advantages of acting powerfully in a dry atmosphere, and of sterilizing at the same time a large number of instruments. The result of his trial showed that when every precaution against error was taken, sulphurous acid was absolutely satisfactory, provided the instruments were exposed for forty-eight hours, also provided the apparatus in which they were kept was hermetically sealed and the instruments were thoroughly cleansed both within and without by soap and water and were not lying in contact with each other. In a large apparatus in which several hundred instruments were disinfected at once, the results were not so satisfactory. Hence Janet concludes that absolute sterilization by sulphurous acid is very difficult when large numbers of instruments must be cleansed at one time.

The clinical results, however, obtained by this method were extremely satisfactory, since, even though the micro-organisms were not destroyed, their virulence was extremely attenuated. There is, however, a still better agent which Guyon at present employs—namely, formol.

Trillat was the first who pointed out the antiseptic value of formic aldehyde. Concentrated solutions of this drug are now made of forty-per-cent. strength. These are called formol. If concentration is pushed to the extreme limit by evaporation, the formol is somewhat altered in constitution, and there is left a white powder called trioxymethylene, which, if exposed to the air, gives off dry vapors of formic aldehyde.

As the result of numerous trials on the part of many observers, it is now well proven that formol, either in its liquid state or as a vapor of formic aldehyde, is a most powerful antiseptic agent, especially valuable since it does not alter or destroy the surfaces with which it comes in contact. Trioxymethylene has the same antiseptic properties, but is not quite so powerful.

Miquel has proposed for the sterilization of books a closed box containing an iron framework or a wooden scaffolding; upon this framework are placed the open books, and beneath it is placed a piece of lint about ten inches wide and about as long as the box, soaked in formol. The box is then closed. In twenty-four hours all bacteria are destroyed and the books entirely sterilized.

If, in place of books, urethral instruments are substituted, the problem of disinfection, in so far as it is applied to urethral surgery, would appear to be solved. It, however, remained to be proven that the calibre of catheters, sometimes extremely small, is reached by the sterilizing vapors. It also had to be shown that the surface of unclean sounds with a deposit of impure matter of some thickness could be as thoroughly sterilized as when these instruments had been previously washed. Finally, the question naturally arose as to whether this sterilization changed the surface of the sounds or rendered them irritating to the urethral canal.

Two series of experiments were made.

In the first series infected catheters were suspended from rubber corks within glass tubes. Formol in different degrees of dilution was poured upon a piece of absorbent cotton and dropped to the bottom of the tube, which was held vertically during the entire course of the experiment, thus avoiding all contact on the part of the instrument with the formol solution.

In the second series of experiments the bougies and catheters were exposed to the formol vapor in a box much like that proposed by Miquel for the sterilization of books. These boxes were made of different sizes, according to the number of the instruments it was desired to sterilize, were hermetically closed, and contained a number of movable shelves superimposed one above the other. A piece of cloth or absorbent lint was stretched transversely at some slight distance from the floor of the box, and was designed to receive the formol solution. This box is preferable to the glass tubes, since it is more stable and prevents direct contact of the instruments with each other; moreover, they are nearer the vaporizing surface, thus greatly increasing the chances of disinfection when the temperature is kept low. The box designed for genito-urinary clinics or for the specialist was 44 centimeters long, 18 centimeters wide, and 10 centimeters high, was hermetically closed by a metallic cap with a rubber washer, and was provided with eight shelves made of perforated metal. These shelves can be stored in the upper part of the box when they are not

required. In the bottom of the box there is a frame upon which can be stretched the cloth 30 centimeters long and 10 centimeters wide. This cloth is stretched above the floor of the box, and thus allows of rapid evaporation of the formol which is poured upon it. Upon this cloth can also be spread the trioxymethylene powder; it should be sprinkled in a shallow layer over the entire surface. This apparatus readily holds two hundred instruments, each one of which can be kept entirely separate from the others.

A similar box is designed for patients who are required to sterilize their own sounds, and for doctors who only rarely use instruments. This is 42 centimeters long, 7 centimeters high, and 7 centimeters wide. Its one end is closed by a simple soft rubber cap. It contains two shelves—the upper movable, the lower fixed,—and below a movable frame in which a layer of absorbent cotton can be spread. This allows of the sterilization of from sixteen to twenty instruments. It is also sufficiently large to contain a cystoscope.

As the result of many experiments the author comes to the conclusion that formol and trioxymethylene are admirably adapted to the sterilization of bougies, but that in case of catheters exposed to twenty-four or forty-eight hours' action there may be failure when small quantities of formol are employed, when the temperature of the surrounding atmosphere is low, or when an attempt is made to sterilize small catheters with very fine lumina, or irrigating cystoscopes. It is probable that all these instruments could be thoroughly sterilized by a more prolonged exposure. This, however, is not practicable. It is essential, then, to employ pure formol or trioxymethylene spread over a considerable surface, and to keep the temperature of the surrounding atmosphere at 15° C.—under no circumstances below 10° C.,—and not to attempt the sterilization for a less period than twenty-four hours for large-calibred catheters, or forty-eight hours for catheters of fine calibre and simple cystoscopes, which must have been previously washed. Irrigating cystoscopes and the ureteral catheter should still be sterilized in the steam apparatus of Nitze.

As to the choice of the two agents, trioxymethylene is very much simpler in its use, since its slow evaporation keeps the atmosphere dry, thus avoiding softening of the sounds. Moreover, cystoscopes are less likely to be altered by dry vapors of trioxymethylene, which gives off its active principles slowly and constantly. The powder, however, is less active and less readily volatile than formol, hence should be employed only where sterilization is comparatively easy—that is, in the smaller apparatus.

A trial as to the effect of the formol upon the instruments and upon the mucous membrane shows that as far as the instruments are concerned the action is a minimum one—that they remain smooth, supple, shining, as when they were first subjected to the influence of the antiseptic. No action is perceptible upon the metallic portions. The bougies exposed to formol become somewhat softer. This is probably owing to their being kept in a moist atmosphere, since when trioxymethylene is used this result is not observed. Moreover, this can be remedied by putting them in a chamber with chloride of calcium. The softening is so slight that it is of no serious consequence.

Instruments taken directly from the formol and introduced into the urethra produce a slight stinging sensation. This is avoided by a preliminary washing in boric-acid solution. As to the preservation of soft instruments, in all cases they should be carefully washed with soap and water within and without and dried as nearly as possible before sterilization, then subjected to the vapor of formol for at least twenty-four hours. When required for use, they are taken out and immediately submerged in weak antiseptic solutions, biniodide of mercury 1:25000 answering very well.

If the patient is required to pass an instrument on himself, say four times daily, he should have eight catheters in the small box already described. Four of these catheters are placed upon the upper shelf and four upon the lower, and trioxymethylene is put in place. Each time the instrument is used, the patient takes one catheter from the upper shelf. After having drawn his water, he puts the catheter aside. The next day the four catheters that have been used are soaped and washed, dried as nearly as possible, and put back upon the upper shelf, the patient then proceeding to utilize those upon the lower shelf. The cap should be removed and replaced as rapidly as possible each time.

For the general practitioner who rarely employs sounds, it is best to place the instruments he is most likely to use in the sterilizing box and leave them there indefinitely until they are required; they can be carried to the patient's house in long tubes filled with boric-acid solution.

Janet concludes his paper with the statement that the commercial solution of formol and its polymer trioxymethylene are superior to sulphurous acid in sterilizing soft instruments, from the fact that they are more rapid, more efficacious, and more manageable. Trioxymethylene is preferable because it is dry and thus does not soften the instruments and does not have to be renewed. It is, however, less rapid in its action than formol; hence, when many instruments are to be used, formol must be chosen. Ureteral catheters are not sterilized by being left forty-eight hours in the atmosphere of trioxymethylene; ordinary cystoscopes which previously have been carefully washed are sterilized in twenty-four hours, more certainly in forty-eight; irrigating cystoscopes are not sterilized in forty-eight hours.

When trioxymethylene is employed, the apparatus can be opened several times in the course of sterilization without interfering with the latter.

The apparatus described may also be employed for the sterilization of various dressings, urethral endoscopes, etc.

Claisse practically corroborates Janet's results, showing that two days' exposure to the formol vapor completely sterilizes instruments affected with the bacilli and cocci of purulent urine. He states that during two months in which this method has been clinically employed, there has been no case of purulent infection from the use of the instruments. He points out that the vapor of formol, if allowed to adhere to the sound, is extremely irritating.

Reports on Therapeutic Progress

SOME FACTS CONCERNING NUCLEINS.

In the *New York Medical Journal* of April 11, 1896, CHITTENDEN, of Yale, sums up his views concerning the nucleins, the value of which is great according to some writers and regarded with doubt by others. Chittenden says that the growing belief that nucleins have important therapeutical action has led to the widespread use of preparations containing these substances, and it may not be amiss, therefore, to consider briefly the composition of a few of these products. In some cases the method of manufacture has apparently had for its object the separation of a pure nuclein or nucleinic acid, freed as far as possible from all other cell or tissue constituents, as in the "nuclein solution, standard, formula of Dr. John Aulde," which is "made from thyreoid and thymus glands," and in the "improved nuclein solution" manufactured by Parke, Davis & Co., which is stated to be a "pure nucleinic acid from yeast." In the preparation known as "protonuclein," on the other hand, the process of manufacture is stated to consist "in the mechanical separation of the cellularly active constituents" of various lymphoid structures and glands, the product presumably consisting of the entire contents of the cells, and hence composed of not only the nucleins and nucleo-proteids naturally present there, but also considerable other material belonging to the substance of the cells.

Taking the amount of phosphorus contained in these products as an index of the proportion of nucleo-proteid or nucleinic acid present, we may draw some inferences as to the character of these pharmaceutical preparations. A sample of "nuclein solution, standard—Dr. John Aulde," recently analyzed by the writer, failed to show any phosphorus whatever, from which the conclusion seems obvious that the solution contains no nuclein. "Tablets of nuclein solution" made by the same manufacturer likewise failed to show any appreciable amount of phosphorus.

A sample of "protonuclein special"—a dry powder—recently analyzed, contained 1.25 per cent. of phosphorus, an amount which accords with the view that the preparation represents a mixture of cell nucleo-proteids with other cell material. Nearly two-thirds of this phosphorus belongs to matter soluble on addition of water—*i.e.*, to nucleo-proteids which dissolve in the water or in the dilute saline solution which results on the addition of water.

"Protonuclein powder," which is presumably a dilution of the preceding preparation with milk-sugar, was found to contain 0.22 per cent. of phosphorus.

The "improved nuclein solution," manufactured by Parke, Davis & Co., is stated to be a one-per-cent. solution of pure nucleinic acid from yeast, containing six per cent. of phosphorus. A sample of this solution recently analyzed was found to contain 0.078 per cent. of phosphorus, which would imply the presence of even more than one per cent. of such a nucleinic acid. From the solution the nucleinic acid itself can be partially separated by precipitation with a little dilute hydrochloric acid and the addition of alcohol. A sample of the acid so precipitated and dried was found on analysis to contain

5.71 per cent. of phosphorus, so that it is evident that a very pure nucleinic acid, and one with a high content of phosphorus, can be separated and made available in fluid form. In this "nuclein solution," therefore, we have pure nucleinic acid isolated by chemical methods from its natural combination with the proteid matters of the yeast cell, and held in solution by the action of a weak alkali. In "protonuclein," on the other hand, we have the nucleo-proteids and nucleins of various gland cells without chemical separation from the other cell-constituents; it is therefore obviously not a pure nuclein, which, indeed, it does not purport to be, but rather a product containing all the cellular elements characteristic of the tissues from which it is derived.

As to the exact therapeutical action of nucleinic acids, nucleins, and nucleo-proteids, time and experience alone can determine.

SALICYLATE OF SODIUM AND URIC ACID.

BOHLAND (*Centralbl. für Innere Med.*, Jan. 18, 1896) has investigated the action of sodic salicylate upon the excretion of uric acid. It would appear, according to the researches of some authorities, that this drug produces an increased excretion of uric acid only when there is an increased production of this body. It is therefore necessary to control the production of uric acid in such investigations.

According to Horbaczewski, uric acid is the metabolic product of nuclein, which latter is chiefly derived from the white blood-cells. The author's investigations with Hecken were carried out upon two healthy men. They found that sodic salicylate considerably increased the excretion of uric acid, but that the number of leucocytes was also greatly increased. Thus, medium doses of salicylates produce a distinct increase in the white blood-cells, and, if Horbaczewski's theory is correct, a considerable leucolysis, and through this latter an augmented uric-acid excretion.

Sodic salicylate has been recommended in gout, but in a number of cases it has been found useless. Some authorities, while admitting that it is of no service in cutting short the attack, yet look upon it as a valuable analgesic. According to the above experimental evidence, it is hardly to be expected that the salicylates should be of use in gout, and the author believes they should not be used even as analgesics either in gout or in the uric-acid diathesis.

MANAGEMENT OF PREGNANCY WITH NEPHRITIS.

MYNLIEFF (*Der Frauenarzt*, Jan. 1, 1896) insists that when a woman with chronic nephritis becomes pregnant, the induction of abortion is indicated on account of the immediate peril of the patient (which increases as pregnancy advances), the certain continuance of the morbid process in the kidneys themselves, the great tendency to flooding and abortion, and the small prospect of the development of the fetus up to term, even if it lives so long. Mynlieff dwells on the responsibilities of the physician who is called in when pregnancy is advanced. The induction of premature labor may then be undertaken at a time which seems most favorable for saving the fetus—that is to say, a little delay may be allowed; but the history of previous pregnancies must be duly considered, and if it is found that the fetus tends to die at a certain date in pregnancy, that date must be anticipated. In any case the life of the mother must be considered first; hence, up to the last, immediate interference is usually the safest course. The same principle is often best for the fetus when viable, as it may die suddenly earlier than in previous pregnancies. —*British Medical Journal*, Feb. 8, 1896.

A NOTE ON EXTERNAL APPLICATIONS OF CREOSOTE IN THE TREATMENT OF MALARIAL INTERMITTENT FEVERS.

LEONARD ROGERS, in the *Indian Medical Gazette* for January, 1896, tells us that a paper by Dr. Carter on the antipyretic effect of external applications of creosote or guaiacol first suggested to him their use in intermittent fevers with high temperature. Their action in producing free perspiration and at the same time lowering the body heat seemed to mark them out as ideal drugs in such cases, and held out hopes of their being able to shorten the duration of the fever paroxysm. In this expectation the author has not been disappointed in the few cases in which he has tried this treatment during the last few months; and although he has accurate notes of only eight cases, the beneficial action has been so uniform that he thinks the treatment deserves a wider trial than he is likely to be able to give it, in order to determine in what cases its action is most valuable.

The dose used was fifteen minims of creosote rubbed into the axilla and covered up with cotton wool. In each case the tempera-

ture was taken twice, with an interval of fifteen minutes, in order to ascertain whether it was falling or not at the time; the creosote was used only in cases where the temperature was stationary or rising, so that any marked fall occurring within an hour or two of its administration, and accompanied by free perspiration, may fairly be attributed to the known physiological action of the drug.

A brief analysis of the cases in which it was used will serve best to illustrate its action. It was only used in cases in which the temperature varied between 103.2° and 104.4°. In six out of the eight cases the temperature was over 104° and stationary at the time the drug was applied. In five cases free perspiration came on within three-quarters of an hour of its use, and in the other three within two hours. The usual time is from half to three-quarters of an hour. In seven cases the temperature had fallen 0.8 to 2.2 degrees three-quarters of an hour after the application, the average fall being 1.6 degrees, and after 1¾ hours 2.3 degrees. After four hours the temperature had fallen 1.8 to 4.2 degrees, or an average of 3 degrees for the eight cases. In one case there was but little fall until the third hour, when a decline of 3.6 degrees in one hour occurred, the perspiration not having come on until nearly two hours after the use of the drug in this instance. In half the cases there was no subsequent rise during the paroxysm treated, but a more gradual fall to normal, and in only one case was there an after-rise of more than one degree —in this case, one of irregular remittent fever, the temperature had risen 3 degrees eight hours after the use of the drug, but was still 1.2 degrees below the original height; and the break had caused great temporary alleviation of suffering. In some of the cases, in previous or subsequent paroxysms of the fever which were not treated with creosote, the temperature remained high for eight or twelve hours, a much longer period than when the creosote was administered—which seems to show that the severity and duration of the attacks were lessened by the use of the drug.

The reduction of temperature, however, is not the only advantage, as in every case with the event of the perspiration and the accompanying fall of temperature the general symptoms, and especially the severe headache, were markedly lessened, and the patients stated that they were greatly relieved and made quite comfortable. The uniformity of this fortunate occurrence was very remarkable, and leads the writer to think that the drug is likely to prove of great service in the treatment of intermittent fevers with high temperatures. Its superiority over the ordinary diaphoretics, such as acetate of ammonium, is very marked. He also urges that it has decided advantages over the antipyrin class of drugs, as in his hands it has had quite as good an effect, both in lowering the temperature and in relieving the headache, while it has not the disadvantages of depressing the heart's action and (what is of more importance in the intermittent class of fevers) of tending to reduce the number of the red corpuscles of the blood, which effect being added to the parasite renders the resulting anemia and weakness greater than if antipyrin, etc., had not been used. In five out of seven cases in which he examined the blood during the progress of the fever, he found the malarial parasites present, and all but one were typical cases of quotidian ague.

He has also used the drug in a case of a continued fever lasting twenty-one days, which was neither typhoid nor malarial in the sense of being caused by Laveran's organisms. On two occasions it afforded considerable relief, once being followed by refreshing sleep, although it only lowered the temperature about one degree, but on a third trial it failed either to lower the temperature or to relieve the headache, although followed by free perspiration. The subsequent course of the temperature chart, however, gave reason to believe that its use did for a time prevent a further rise of the fever. This method of treatment is worthy of a careful trial as an antipyretic in remittent and continued fevers, while it will prove of great service in shortening and lessening the severity of the paroxysms of intermittent fevers, the further development of the organisms, when present, being prevented by the use of quinine.

TREATMENT OF GRANULAR OPHTHALMIA BY LIQUID VASELIN AND IODINE.

NEZNAMOFF, of Kharkoff, in cases of granular eyelids paints the mucous membrane twice daily with a solution of pure iodine mixed with liquid vaselin, which is also called "oil of vaselin" (oleum petrolei). In chronic forms, as cicatrices from granular ophthalmia with pannus, infiltrations, and superficial opacities of the cornea, he employs liquid vaselin containing one-half to one per cent. of iodine. By the third or fourth day a great

improvement is visible; at the end of two or three weeks the vessels of the pannus become obliterated, the effusions are reabsorbed, the cornea regains its transparency, the palpebral mucous membrane becomes smoother and softer, and in consequence the sight improves. The so-called "fleshy pannus" (pannus crassus) will yield with great rapidity to applications of oil of vaselin containing 1½ per cent. of iodine. Thus, in a case where two-thirds of both corneæ were covered by a pannus at least half a millimeter in thickness, after three weeks of treatment the left eye presented only a slight and altogether superficial opacity, while on the right eye there was simply a very thin pannus. In cases of recent trachoma, both of the granular and papillary forms, the quantity of iodine should be increased to three and even five per cent. As oil of vaselin does not dissolve more than 1½ per cent., a little sulphuric ether—or, better still, rectified petroleum—should be added in order to obtain a more concentrated solution of iodine. Painting the palpebral conjunctiva with these strong solutions generally causes a good deal of discomfort; the mucous membrane becomes red, the eyes water, and the patient suffers acute pain, which is, however, of but short duration. After four or five applications a catarrhal condition ensues, accompanied by copious secretion, congestion, and slight tumefaction of the mucous membrane. At this stage, in addition to the application of iodine twice or thrice daily, Neznamoff lightly cauterizes the conjunctiva with a solution of nitrate of silver of the strength of two per cent., washing the eye immediately afterwards. In addition to this he lances the largest granulations and expresses their contents. In cases of recent trachoma with abundant secretion at the outset, before employing the strong solutions of iodine it is advisable to apply glycerin mixed with one-half per cent. of iodine in order to arrest the secretion.

The excellent results of Neznamoff's plan have been confirmed by Dr. L. L. Hirschmann, Professor of Ophthalmology in Kharkoff. He has found it useful in cases of granular ophthalmia and also in other ocular diseases. Thus cases of inveterate blepharitis of the ciliary canal will rapidly mend when liquid vaselin containing iodine in the proportion of one-half or one per cent. is applied to the edges of the eyelids. Instillations of several drops of this same solution are beneficial in cases of inflammation of the larchrymal sac. Finally, old infiltrations due to parenchymatous keratitis become reabsorbed on a solution of iodine in liquid vaselin of the strength of two, three or five per cent. being applied to the palpebral conjunctiva. Solutions of iodine in oil of vaselin, obtained by the addition of sulphuric ether or by essence of petroleum, should be kept in the dark in well sealed bottles; they remain clear for about a week, after which time they become thick and are no longer fit for therapeutic purposes.—*The Lancet*, Feb. 8, 1896.

THE THERAPEUTIC ACTION OF THE BROMIDE OF POTASSIUM IN CONJUNCTION WITH ADONIS VERNALIS AND CODEINE.

TATY (*Lyon Méd.*, Dec. 29, 1895, Jan. 5 and 12, 1896), noting the remarkably favorable results which Bechterew had obtained by the employment of this combination of drugs in cases of epilepsy, determined to make a series of clinical researches to determine how great the therapeutic value of this combination was, and to what extent it avoided the unpleasant complications that attend the administration of the bromides in these cases.

The author wished to determine, first, if there was any action upon the epileptic crises, and if so, what that action was; second, if the association of the three drugs augmented the tolerance and prevented the cumulative action and consecutive cerebral manifestations; and also what, if any, difference there was after the sudden stoppage of the drug.

The series of clinical observations was made upon seventeen cases and continued for a long period.

The result of this observation demonstrated that the unpleasant complications were not avoided. The dose, it is true, had been high in order to test thoroughly the cumulative action. The number and character of the heart-beats remained normal, and although it was impossible to examine the urine with absolute accuracy quantitatively and qualitatively, the examination as far as made showed no departure from the norm. Constipation was the rule, for, although the patients had daily stools, these were always hard, and, where the cessation of treatment was followed by paroxysms, purgatives had to be administered. Somnolence was also present constantly, with the exception of one instance in an idiot, who was very refractory.

The phenomena following sudden suppression of the drugs were similar to those ob-

served with potassium bromide alone. At the end of two or three days there were series of crises, more or less accompanied by agitation. There were, however, no very dangerous symptoms, although some of the patients were very impulsive and evilly disposed.

The author in conclusion says that this combination does not prevent the complications and disagreeable symptoms which arise during the administration of the bromide of potassium.

A second series of experiments was conducted to note the effects of these drugs in varying modes of combination. The results were as follows:

The addition of codeine to the bromide appears to produce bad results; it certainly produces constipation and probably somnolence, which were not noted where this drug was omitted. The effect of the combination is otherwise the same as that of the bromide alone; bromism is not entirely avoided, any more than when the bromide is administered alone.

The adonis does not affect the circulatory system, though the heart-beats seem less full and a little more frequent; but there is no cumulative action as with digitalis. The drug has a tonic and diuretic action, and its action in obesity gives the hope that it will be useful in combination with the bromides.

There was no therapeutic effect except upon the crisis. The mental condition was not altered. The adonis did not influence the hebetude or the convulsions.

TREATMENT OF CIRRHOSIS OF THE LIVER.

G. KLEMPERER (*Berl. Klin. Woch.*, Jan. 6, 1896) draws special attention to the value of urea as a diuretic in this disease. In his experience the good effect of tapping in recent ascites due to hepatic cirrhosis has not been as evident as has been stated by some authorities. He has seen two cases of speedy death after it, due respectively to cardiac failure and to hemorrhage from the stomach. Klemperer does not believe that the pressure on the kidneys and vessels exercised by the fluid is so important a factor as is usually believed. He treats recent cases of this form of ascites by diuretics; has seen good results from the use of calomel and digitalis, but calomel has been known to cause unpleasant effects. He says that urea has produced good results in these cases, and that diuresis is considerably promoted by it. He gives ten grammes in the day, increased up to fifteen or even twenty grammes, and continues the treatment for two or three weeks. He has never seen any unfavorable effects from the administration of urea. The unpleasant taste may be done away with by drinking milk immediately after taking it. The author records two illustrative examples of this treatment: the diuretic effect was marked, the urine increasing from 250 even up to 4000 cubic centimeters in one case, and from 600 to 5000 in the other. The abdominal girth fell in one case from 106 to 86 centimeters, and in the other from 97 to 82. In both cases the liver and spleen became palpable after the treatment. Great improvement was thus obtained: in one case the ascites disappeared entirely, and in the other hardly any fluid was recognizable when the patient had to leave the hospital. These two cases are examples of how a fresh ascites may disappear without tapping, and of how urea may be of much value as a diuretic in these cases when the kidneys are healthy. Klemperer strongly recommends this new diuretic in suitable cases.—*British Medical Journal*, Feb. 8, 1896.

THE IRRATIONAL EMPLOYMENT OF INTESTINAL ANTISEPTICS.

HUCHARD called the attention of the Société de Therapeutique (Dec. 11, 1895, *Revue Internat. de Méd. et de Chirurgie*, Jan. 10, 1896) to the frequent irrational employment of intestinal antiseptics.

Sometimes they are used in excess, at other times the proper ones are not employed—as, for instance, in numerous cases of hyperacidity that are treated by antiseptics. Hydrochloric acid is an antiseptic of itself; although its action is not direct, it is efficient. Sometimes the fault lies in not giving a sufficient quantity, forty-five grains or a drachm of benzonaphthol being prescribed where three times that amount is called for.

Nothing can be inferred as to the efficacy of an antiseptic from the presence of its odor in the feces. Deodorization and disinfection do not go hand in hand.

The author believes that the therapeutist should if possible secure asepsis instead of antisepsis, and to this end he advises the practice of enteroclysis.

The principal indication for this method of treatment is uremia, which, according to Bouchard's definition, is an intoxication by all the poisons introduced into the body which

the kidneys are incapable of eliminating. Another indication is alimentary dyspnea, which has an origin in ptomaines, produces a state of cardiac hyposystole, and is one step in the production of a true dyspneic uremia.

The method of administering the enteroclysm the author describes as follows: A long esophageal catheter, communicating with a receptacle by a rubber tube, is the instrument required. This should hold two quarts of a salt solution at a temperature of 104° F. The catheter is introduced into the rectum, which is then plugged by cotton tampons. With the use of three quarts of water the ileo-cecal valve can be easily passed, and the water will pass into the small intestine. With six quarts the water will pass into the stomach, and some experimenters have made it flow from the mouth —this, however, has no advantage.

The only inconvenient results of this mode of treatment are, in some cases, severe colics. The results produced have been very gratifying, as the following short *résumé* will show:

The first case had uremia, with Cheyne-Stokes breathing, approaching asphyxia for the past month. The enteroclysm put him on his feet in a few days.

The second case had insufficient urination, with asystolia and a serous pleurisy. Theobromine had been unable to produce good results. This condition had arisen during convalescence from typhoid fever complicated by a parotitis and a diarrhea that was rebellious to all treatment. The enteroclysm was followed by complete relief.

The author also cites a case of chlorosis cured by this method of treatment, and although not concurring in the opinion that this disease has an intestinal origin, it was evident that the treatment had a markedly rapid and beneficial effect.

The author concludes that this method produces as certain and rapid a diuresis as any other therapeutic method now employed.

MASSAGE OF THE ABDOMEN IN HABITUAL CONSTIPATION.

KUMMERLING (*La Sém. Med.*, Dec. 4, 1895) describes an effective method of treating chronic constipation by abdominal massage.

The patient lies upon the right side; the operator grasps the skin and subcutaneous fat over the sigmoid flexure between the thumb and index finger of each hand, and executes a series of movements from above downwards over the intestine, making pressure with the tips of the free fingers as well. This is continued for about five minutes. At the end of this time the patient is turned over on the other side and the massage applied in the opposite direction—that is, from below upwards to the cecum and ascending colon. The massage of the small intestine and the transverse colon is all that then remains; this is accomplished best with the patient in the knee chest position, as then the abdominal wall is relaxed and the intestines come nearest to the hand of the manipulator.

The immediate effect of this massage, extending over fifteen minutes, is easy and abundant evacuation of the bowels.

FIFTY OUNCES OF SUBNITRATE OF BISMUTH IN TWENTY-FOUR DAYS.

MATHIEU (*Rev. Internat. de Med. et de Chir.*, Jan. 10, 1896) reported before the Société Médicale des Hôpitaux, at its December meeting, the case of a patient suffering from a hypersecretion of hydrochloric acid, for whom he had prescribed 3¾ drachms of bismuth subnitrate in the morning and 75 grains at night, with $\frac{1}{120}$ grain of atropine sulphate. This treatment the patient continued to carry out while the physician was absent on a vacation of about twenty-four days, and took during this time about fifty ounces of the subnitrate of bismuth.

This amount had no effect upon the general condition of the patient, and did not aggravate the gingivitis and stomatitis which had been present for some time previous. There was no tattooing of the cheeks, but a pigmentation similar to that seen during pregnancy developed, gradually disappearing after the cessation of treatment.

This enormous dose of bismuth produced only a relative amount of constipation and did not appreciably modify the function of the stomach, the chemical condition remaining about the same after treatment as before.

THE DIURETIC ACTION OF THEOBROMINE IN CARDIAC AND RENAL DISEASE.

From a large number of clinical observations on the action of this drug, HENRI HUCHARD (*Revue de Thérap.*, Feb. 1, 1896) draws the following conclusions:

1. Theobromine is one of the best and most uniformly reliable drugs we know of for

the treatment of the anasarcas and edemas accompanying cardiac and renal disease.

2. It belongs to the class of direct diuretics, acting directly upon the renal epithelium, which it stimulates to increased functional activity without altering it. Experiments have been made to determine if the theobromic diuresis is accompanied by an increased albuminuria. In one case under the author's observation, in which there was a considerable edema of the lower extremities following pressure, it produced, with the patient on a milk diet, a marked diuresis without causing naturally the least diminution in the edema—a diuretic effect which could not be produced by digitalis, which is indirectly diuretic, and only active in cases of cardiac dropsy.

3. It acts most efficiently in arterio-cardiac disease characterized by cardiac and renal sclerosis; in all forms of cardiac disease of a valvular nature complicated by albuminuria or that have reached the period of asystole; finally, in interstitial and parenchymatous nephritis.

4. The combination of digitalis, caffeine and theobromine does not increase the diuretic effect. The same is true of the combination of theobromine with lactose.

5. To prolong the diuretic action of the drug, it is well, especially in cardiac disease, to prescribe, after the last dose of a course of theobromine that has extended over six days, $\frac{1}{128}$ to $\frac{1}{64}$ grain of digitalin for one day.

6. The diuresis is produced on the first day of administration, a decided advantage over digitalis. It persists for two to four days after the last dose, and the urine may reach five and even six quarts. In addition the drug has no accumulative effect, is scarcely toxic, and produces only in certain individuals, after a dose exceeding thirty to forty-five grains, some cephalalgia, sometimes nausea and vomiting, and very rarely cerebral excitation.

7. The diuresis of theobromine is more rapid and as sure and abundant as that of digitalis, and more rapid, abundant and certain than that produced by caffeine.

8. Theobromine often succeeds in cases where digitalis and caffeine have failed.

9. A medium dose is thirty to forty-five grains, prescribed in amounts of about eight grains. Doses of sixty to seventy-five grains are not at all dangerous, and may frequently be employed.

10. In infectious diseases, where urinary depuration is so important, and also in grave disease of the liver involving the hepatic cells, as in cirrhoses, the employment of theobromine in doses of thirty to forty-five grains per diem, by producing an increased diuresis, accomplishes good therapeutic results when combined with a milk diet.

ANESTHESIA STATISTICS.

GURLT (*Archiv für Klinische Chirurgie*, bd. li, heft 1) tabulates as follows the results of a collective investigation among the members of the German Surgical Society of Berlin into the frequency and fatality of anesthesia induced by various agents and combinations:

ANESTHESIA WITH CHLOROFORM.

	Cases.	Deaths.
1890–91	22,656	6 = 1 : 3776
1891–92	72,593	31 = 1 : 2341
1892–93	38,495	9 = 1 : 4278
1893–94	33,068	17 = 1 : 1946
1894–95	34,412	25 = 1 : 1376
	201,224	88 = 1 : 2286

ANESTHESIA WITH ETHER.

	Cases.	Deaths.
1890–91	470	..
1891–92	7,968	..
1892–93	6,213	..
1893–94	11,669	2 = 1 : 5834
1894–95	15,821	5 = 1 : 3164
	42,141	7 = 1 : 6020

ANESTHESIA WITH CHLOROFORM AND ETHER IN COMBINATION.

	Cases.	Deaths.
1890–91	1,055	..
1891–92	1,854	1 = 1 : 1854
1892–93	1,209	..
1893–94	3,896	..
1894–95	2,148	..
	10,162	1 = 1 : 10,162

ANESTHESIA WITH CHLOROFORM, ETHER, AND ALCOHOL IN COMBINATION.

	Cases.	Deaths.
1890–91	417	..
1891–92	2044	..
1892–93	979	..
1893–94	750	1 = 1 : 750
1894–95	1554	..
	5744	1 = 1 : 5744

ANESTHESIA WITH ETHYL BROMIDE.

	Cases.	Deaths.
1890–91	27	..
1891–92	2433	1 = 1 : 2433
1892–93	2095	..
1893–94	2986	1 = 1 : 2986
1894–95	1426	..
	8967	2 = 1 : 4483

ANESTHESIA WITH PENTAL.

	Cases.	Deaths.
1891–92	219	1 = 1 : 219
1892–93	378	2 = 1 : 189
1894–95	34	..
	631	3 = 1 : 210

—*Medical News*, Nov. 23, 1895.

ANTI-TYPHOID SERUM.

In the course of a communication to the Paris Société de Biologie, on February 22, on "The Early Diagnosis of Typhoid Fever by a Bacteriological Examination of the Stools," M. Chantemesse said that last June he had succeeded in immunizing several horses against the virus of typhoid fever. He had obtained the serum of such strength that one-fifth of a drop inoculated into a guinea-pig twenty-four hours before infection protected it against a dose of typhoid virus fatal to animals not previously injected with the protective serum. It was ascertained, also, that injections of the serum produced no injurious effects upon a healthy man.

The author stated that he had since employed injections of serum in three cases of typhoid fever. The temperature showed a regular fall from the time the first injection was made, and seven days after the commencement of the injections all three patients were quite free from fever and had commenced to convalesce.—*British Medical Journal*, Feb. 29, 1896.

NITROGLYCERIN IN THE TREATMENT OF SCIATICA.

KRAUSS tells us in the *New York Medical Journal* of February 29, 1896, his experience in the treatment of sciatica by nitroglycerin, and after describing the cases says in conclusion:

Of these seven patients, all received marked benefit from the very beginning of the use of this drug. The acute cases recovered in from ten days to a month; the chronic cases improved notably and gained daily.

Just how to explain the action of this drug on sciatic disturbances is extremely difficult; to say that it has the effect of dilating the arterioles of the nerve-sheaths, affording more nourishment to the nerve, might answer in cases of neuralgic sciaticas, but would hardly be accepted for neuritic. The action in these latter cases can be explained in no satisfactory way, and therefore had better be left unexplained.

The only discomforts arising from the use of this drug were congestive headaches and flushing of the face sometimes following the first dose of the medicine, while in others they did not supervene until the maximum doses were administered. To counteract these effects the bromides may be used, thus robbing the nitroglycerin of all its physiological effects where they are not wanted, and allowing them to proceed without hindrance in those places where they are desired.

The author does not wish to convey the idea that nitroglycerin will cure every case of sciatica—far from it; but if it cures fifty per cent. of all cases in a period of from one to three weeks it will be doing what no other drug or measure has heretofore done. If after a period of administration of ten days no perceptible effects have been obtained, it should be abandoned, and kept in store for the next case. The treatment of anemic conditions, diatheses, and local causes, such as pressure—these, perhaps, provoking and setting up the sciatic pain—must, of course, be considered and carried out in conjunction with the special treatment.

From his experience he would advise beginning the treatment of sciatica with nitroglycerin, falling back upon the other drugs and measures only after its inability to cure becomes apparent.

LOCAL TREATMENT OF LARYNGEAL PHTHISIS.

KUTTNER (*Berl. Klin. Woch.*, Jan. 20, 1896) strongly pleads for the more active treatment of laryngeal phthisis. He gives short details in which three patients were well three and four years after curetting, laryngo-fissure having been previously done in one case. The state of the lungs improved considerably in two cases, and to a less extent in the remaining one. Further, a case of pharyngeal tuberculosis healed after repeated scraping and the application of the galvano-cautery and lactic acid. In two other cases the patients were in good condition eight months after incisions had been made into the infiltration and lactic acid rubbed in. In the first instance efforts were made to cure the disease by the application of disinfectants, and then by the removal of the diseased tissue as far as possible. The author only uses powders when there is abundant secretion, and cleansing inhalations are always employed before the application of any remedy. Lactic acid is to be used in cases where there is ulceration. If the above means do not answer, then incision, curetting, the galvano-cautery, electrolysis, tracheotomy, laryngo-fissure, remain. With high temperature or advanced pulmonary disease, these measures cannot be recommended except to save life. Incision may be practiced in hopeless cases where a few

foci of infiltration are present. In some cases curetting gives good results, but all diseased tissues must, as far as possible, be removed. The galvano-cautery may supplement the curette, but larger bits of tissue should be cut off rather than burnt away. Tracheotomy has been of service even in cases where there was no danger from laryngeal stenosis, perhaps owing to the rest which it afforded the larynx. The author thinks that in some cases laryngo-fissure is to be preferred to the endo-laryngeal use of the curette, especially in cases where the disease lies in the posterior wall of the larynx. Besides the case above referred to, the author has performed thyrotomy in three other cases. One of these cases died a few weeks after the operation from pneumonia, but the two others lived for over a year.—*British Medical Journal.*

IPECACUANHA IN THE TREATMENT OF BEE-STING.

Dr. George King, of the Calcutta Botanical Gardens, was recently attacked by a swarm of bees while he was engaged in some work in Baroda. He was severely stung by the swarm on the hands, head, face, and neck, no fewer than 150 stings being afterwards taken from his neck. Fortunately, Dr. King had some ipecacuanha powder with him, which he immediately had made into a paste and smeared over his head, face, and neck. The effect of the ipecacuanha was most marked, preventing to a large extent the swelling and pain which inevitably follow the bee's sting. —*Indian Medical Gazette*, February, 1896.

TREATMENT OF MALARIAL FEVER.

At a recent discussion at the Calcutta Medical Society, Dr. Crombie insisted on the free use of quinine in the treatment of malarial fever, and on the essential necessity of a precise diagnosis as a preliminary to the scientific use of that drug. The value of his remarks applies chiefly to those cases in which there is no distinct intermission, and in which the question always arises as to whether the case is one of malarial or non-malarial remittent fever, there being, of course, no doubt when the fever is intermittent in its nature. If the identification of the malarial organism were as simple as we could wish it to be, no difficulty would naturally arise, and it would be merely a matter of examining the blood taken from the finger. He did not dispute the causal relationship between the malarial organism and the phenomenon of malarial fever, but admitted that a great practical difficulty exists in applying this knowledge clinically, on account of the numbers of specimens which it is sometimes necessary to examine in order to establish the presence or absence of the parasite in the blood of a given case. Under these circumstances it is necessary to fall back on the clinical characters exhibited. The clinical data on which Crombie depends for his diagnosis are: (*a*) The history of a distinctly intermittent character of the symptoms at an earlier stage, before they became remittent in type; (*b*) the existence of a more or less distinct remission of the pyrexia at a fairly regular time of the day or night; or (*c*) the occurrence of two remissions, however slight, and two exacerbations, in each period of twenty-four hours, suggesting the existence of two sets of organisms maturing asynchronously. When one or other of these clinical features is found, Dr. Crombie is of opinion that quinine should be given with a lavish hand; he exhibited charts of twelve recent cases showing that cessation of the fever followed the administration of the quinine in adequate doses within thirty-six or forty-eight hours from the commencement of the treatment. To obtain these results, it appears that the doses must be heroic, and that the physician must not be deterred from their use by fears of the unpleasant physiological effects of the drug—effects which do not usually occur if the diagnosis has been carefully made and the condition treated is one of truly malarial origin. This is a consideration which seems to be constantly lost sight of. In the discussion which followed, some of the members dissented from Dr. Crombie's views and gave instances of unpleasant symptoms following the administration of quinine in large doses; but if these cases could have been analyzed, it would probably have been found that the fevers were not of malarial type and were therefore unsuited for treatment by quinine, whether in large or small doses. The point to which Dr. Crombie attached most importance in his paper was the establishment of this diagnosis as the first duty of the physician when called to a case of remittent fever; without this essential, he declared, no effective treatment was possible. Among Europeans, ten grains of quinine given every four hours, irrespective of the temperature, would not be found to be too much, although among native patients of lesser body-weight and lower physique it would probably be advisable to be content with somewhat

smaller doses. To wait until the temperature approaches normal limits after the diagnosis of malarial remittent fever has been established, would seem to be an unjustifiable delay, because it is tantamount to waiting until the fever poison has exhausted itself in the body of the patient, whereas the quinine might meanwhile be destroying the organism which elaborates the poison. The evil results so much dreaded in giving quinine in high temperatures probably originate only when the quinine ought not to have been given at all—that is, in non-malarial cases.—*Indian Medical Gazette*, February, 1896.

THE PAIN-RELIEVING PROPERTIES OF GUAIACOL.

At a recent meeting of the Academy of Medicine of Paris, FERRAND made a report upon the researches of Pise on the application of compresses of guaiacol for the relief of painful points underlying the skin. It is his custom to wet a compress with from fifteen drops to one drachm of guaiacol, apply it to the part affected by pain, and bind it on with a gauze bandage. Not only is the pain thereupon markedly decreased, but anesthesia is so complete that minor surgical operations can be performed upon the part. It is absolutely necessary that the guaiacol should be pure. If left too long in contact with the skin and used in very large amount, it may produce a fall of temperature and symptoms of collapse.—*Journal des Praticiens*, Feb. 29, 1896.

THE PHYSIOLOGICAL AND THERAPEUTIC INFLUENCE OF CARBOLIC ACID.

At a recent meeting of the Faculty of Medicine of Paris, POUCHET contributed a paper with this title, in which he showed that the physiological action of carbolic acid can be divided into local and general effects. Locally it is an energetic caustic, in dilute solution an irritant. In concentrated form, when brought in contact with the tissues it causes rapid disorganization of the part and the formation of a hard mass which does not disappear for some time, while if one of the extremities be immersed in a comparatively weak solution of the drug a contraction of the capillaries and consequent pallor of the skin results, with a certain amount of local anesthesia—a stronger solution producing some preliminary burning. Upon the mucous membrane, the author reminds us, the acid causes first a sensation of burning pain, then anesthesia, leaving a white eschar. Full doses of carbolic acid internally may produce vertigo, roaring in the ears, tingling of the fingers, flushing of the face, increased salivation, and some sweating, besides the other well known toxic effects of the drug.

In regard to its therapeutics, Pouchet tells us that carbolic acid is best administered after adding to it small quantities of alcohol or glycerin, but he also points out that the addition of alcohol markedly increases the caustic property of the acid. There can be no doubt that for application to raw surfaces in considerable quantity, the concentrated form is far less dangerous than any dilution. This point has recently been emphasized by Dr. Allis, who states that where a dilute solution is employed the albumin in the tissues is not coagulated, and therefore the absorption of the drug readily follows; whereas if the pure drug is employed, its caustic effect is so great that a protective wall is formed through which large amounts of the acid cannot be absorbed.—*Journal des Praticiens*, Feb. 29, 1896.

WHAT SHALL A GENERAL PRACTITIONER DO FOR AN ACUTE OTITIS?

Dr. DENCH, in the *Archives of Pediatrics*, says that if a patient suffering from inflammation either of the external auditory meatus or the middle ear is seen in the early stages of the attack, the physician should attempt to abort the inflammation as well as to relieve the symptoms. He vigorously condemns the old practice of dropping warm sweet oil, or the mixture of sweet oil and laudanum, into the external auditory canal for the relief of "ear-ache," and says such a practice is a relic of barbarism which deserves no place in modern medicine. As abortive treatment, local abstraction of blood by wet cupping or the use of natural leeches is recommended. The wet cupping or leeches should be applied immediately in front of the tragus, and from one-half to one and one-half ounces of blood may be withdrawn. The patient should be kept in bed, and a free catharsis instituted. It is frequently wise to follow the abstraction of blood by the administration of an opiate sufficiently powerful to quiet the patient for five or six hours. In all cases heat is a most valuable means for the relief of pain, dry heat being preferable. A convenient method of applying dry heat is found in the use of small hot salt-bags, which may be introduced

into the meatus; heat being applied externally by means of the hot-water bag or other devices. These salt-bags are conveniently made by cutting off the finger-tips of a small kid glove, filling them with salt, and placing them upon a hot plate until they are completely heated, after which they are placed just within the meatus. The author does not favor the use of moist heat in any form during the early stages of an acute otitis, because of the fact that by its use the tissues are softened and disintegration encouraged. If the inflammation is not aborted, and discharge makes its appearance, frequent irrigation of the external meatus by means of a weak antiseptic solution (bichloride of mercury 1:5000, or boric acid) is the best measure for combating the inflammatory process and for preventing its extension to the neighboring parts. It is unwise to stop the meatus with cotton or to keep the ear covered, as in this way local infection of the canal is liable to occur, causing circumscribed or diffuse inflammation. Under no condition should any attempt be made to diminish the quantity of discharge until the temperature becomes normal and all pain has disappeared. In the majority of cases careful cleansing is the only treatment required, the discharge ceasing spontaneously. Astringents are not recommended, and in cases where the discharge persists the author simply advises the use of a solution of boric acid in alcohol as an instillation after syringing. The objection to solutions of sulphate of zinc and other kindred instillations is that they form a splendid nidus for vegetable parasites.—*Fort Wayne Medical Magazine*, March, 1896.

NEPHRECTOMY FOR HYDRONEPHROSIS SIMULATING CYSTIC OVARY.

In a recent number of *La Bourgoyne Médicale*, BARBIER and BROUSSOLLE report a case in which hydronephrosis simulated a large cyst of the ovary for which an operation was performed. Finding that the cystic kidney was the cause of the swelling, this organ was removed. As is very apt to be the case under such circumstances, total suppression of urine ensued, with all the symptoms of uremia, and it was found at the post-mortem that the remaining kidney had undergone similar degenerative changes, and that the extirpation of one of these organs had therefore precipitated the attack of uremia. A cystic kidney or a kidney suffering from hydronephrosis is very apt to be accompanied by similar disease in the other organ, and in the majority of instances surgical interference is contraindicated.—*Journal des Praticiens*, Feb. 29, 1896.

THE PATHOLOGY AND TREATMENT OF RICKETS.

The *Journal des Praticiens*, February 29, 1896, describes the method which it believes should be resorted to in the treatment of the rickets of early life. In the first place it must be remembered that the disease depends upon an insufficient absorption and assimilation of lime salts and other substances adapted to the formation of healthy bone-tissue; second, we must not forget that according to one theory the bones are decreased in strength by a process of autointoxication which is generally associated with an artificial milk diet and with dilatation of the stomach; third, we must remember that some cases of infectious disease produce rachitic tendencies, and that malaria and syphilis are peculiarly apt to do so.

Whatever may be the theories as to the pathogenesis of rickets, the *Journal des Praticiens* points out that the treatment is fairly clear. In the first place, the greatest possible attention must be paid to the diet during the early months of life. Care should be taken to see that the food contains the normal proportions of bone salts, and as much fresh air as possible should be obtained by the patient. In addition to this hygienic treatment it is well to administer mineral materials, and the following solution of phosphate of sodium is of value:

℞ Phosphate of sodium, 4 drachms;
Pure hydrochloric acid, 2½ drachms;
Distilled water, 1 quart.

One to four teaspoonfuls of this solution may be given each day in milk, according to age. In other instances a small pinch of the following powders may be administered night and morning:

℞ Sugar of milk, 2½ drachms;
Phosphate of lime, 2½ drachms;
Lactate of iron, 1 drachm.

Or,

Saccharated carbonate of iron,
Lactate of iron,
Phosphate of lime, of each, 1 drachm;
Sugar of milk, a sufficient quantity.

On the other hand, Albert proposes a more simple remedy, namely, the administration of from two teaspoonfuls to a tablespoonful of the following solution each day:

Lime-water, 6 ounces;
Simple syrup, 2½ ounces.

In still other instances cod-liver oil is a most efficient remedy, but should it produce indigestion the following mixture of Trousseau's may be employed:

℞ Pure butter, 1 lb.;
Chloride of sodium, 1 drachm;
Bromide of potassium, 7 grains;
Iodide of potassium, 2 grains.

This should be taken with food in the course of three or four days. Sometimes it is well to administer at the same time $\frac{1}{100}$ grain of phosphorus.

Should syphilis be suspected as the cause of the rachitic tendency, it is hardly necessary to add that mercurial treatment, chiefly by inunction, should be resorted to.

THE URINE AFTER ANESTHESIA.

The influence of various general anesthetics upon the processes of metabolism in the body has been repeatedly studied, both upon clinical material and by means of animal experiments. In this way the advantages and dangers of this or that anesthetic have been more or less thoroughly established. The action of chloroform and ether upon the kidneys has received special attention. Post-anesthetic albuminuria and glycosuria have been repeatedly investigated, with the result that the liability to nephritis after anesthesia in persons with healthy kidneys has been shown to have been in the past very much exaggerated. Among the recent contributions upon this important topic may be mentioned Weir's "Studies of the Influence of Ether upon the Kidneys." In 1890 Weir presented the results of an examination of forty cases of ether anesthesia, showing that in about one-quarter of the cases in which the kidneys were previously healthy, slight transitory albuminuria occurred after the narcosis. Feuter's conclusions, based on clinical and experimental observations, were that ether has no perceptible influence on the healthy animal kidney, that it is not dangerous in persons whose kidneys are slightly diseased, and that albuminuria very rarely occurs after ether anesthesia in persons with healthy kidneys. Butler found albuminuria but once after five hundred ether narcoses. Korte found albumin in the urine only six times in six hundred narcoses in healthy persons. In seven cases where albumin preexisted in the urine it was not increased by the etherization. Wunderlich concludes that in an already existing case albuminuria is frequently increased by ether narcosis, but that this is twice as common in chloroform anesthesia—in the proportion of 11.5 to 6.9 per cent. Wunderlich says that an ether nephritis may be excluded from surgery. Wood thinks that if the kidneys are diseased, increased irritation may occur from ether narcosis; in animals he found etherization to produce cloudy swelling of the renal epithelium; but Selbach found that prolonged etherization, repeated on many successive days, never produced nephritis, and out of ten animals slight fatty degeneration of the renal epithelium was found but once. Weir's last communication upon this topic contains the following summary of results:

	Cases.	
Normal before and after	254	
Abnormal before, but without increase in albumin or casts after	7	
Abnormality lessened after	3	
		264
Normal before, afterward abnormal	31	
Abnormal before, abnormality increased	8	
		39
Total number of cases		303

In other words, the albuminuric condition was either caused or aggravated in thirteen per cent. of the cases. Weir also studied one hundred and twelve cases where a record was kept of the temperature after etherization, and came to the general conclusion that elevation of temperature appears to have no positive influence so far as abnormal excretions are concerned. Wunderlich and others have never been able to find sugar after narcosis where it did not exist before.

Kast and Mester report that after prolonged chloroform narcosis in healthy individuals a protracted disturbance in the metabolism of albuminous substances, similar to that induced by phosphorus poisoning, may develop, a sulphur-containing substance similar to cystin being excreted in considerable quantities.

Becker, of Bonn, described some instances of rapidly fatal diabetic coma subsequent to narcosis, which he was inclined to believe were due to acetonuria, and this observation led him to investigate the question whether or not narcosis can lead to the production of acetone in healthy persons; he therefore set about to systematically examine the urine of practically all the patients anesthetized in the surgical clinic of the Bonn University, for sugar, albumin, and acetone, before as well as after the narcosis. The method used for the demonstration of acetone was the qual-

itative test of Legal, which is made as follows: To a few cubic centimeters of filtered urine, add a few drops of a freshly prepared ten-per-cent. watery solution of nitro-ferrocyanide of sodium; make the mixture alkaline by adding a solution of sodic or potassic hydrate, when a Burgundy-red color appears; then add a few drops of strong acetic acid, and, if acetone be present, a purplish tint will be formed at the juncture of the acid and the mixture. Becker made the unexpected observation that in the majority of healthy persons there arises an acetonuria of varying duration after narcosis. The following table will give a bird's-eye view of his results:

Anesthetic.	No. of Patients.	Positive.	Negative.
Ether	195	132	68
Bromether	16	7	9
Chloroform	5	5	..
Ether followed by chloroform	33	22	11
Bromether followed by ether	2	1	1
	251	167	84

The duration of the narcosis did not seem to have any influence on the occurrence of the acetonuria; the same is also true as regards the nature of the disease and of the operation—whether bloody or not. In children acetonuria seemed to be more frequent and also more marked than in adults. As a rule it disappeared on the third or fourth day, but in some instances it continued for eight or nine days. In a case of perineal section it was possible to show that twenty minutes after the beginning of the anesthesia the urine contained acetone, having previously been free from this substance. In a number of cases containing acetone in the urine before the narcosis, the acetonuria was found to be increased after the operation, and in three diabetics the narcosis increased preexisting acetonuria very considerably.

Concerning the significance of acetonuria in general, it has been shown by Von Jaksch and others that it arises from the disintegration of albuminous substances, and consequently post-narcotic acetonuria is a symptom that points to an increased destructive metabolism of albuminous compounds during and also after the anesthesia. In healthy individuals this post-anesthetic acetonuria seems to be without any evident dangerous consequences, but in diabetes the increased excretion of acetone is more ominous. In one case of bromether intoxication, abnormally large quantities of acetone were excreted, which led Becker to believe that serious disturbances of tissue-metabolism had been induced.

The interesting and new observations by Becker upon acetonuria after anesthesia may be summarized in the following conclusions:

1. In healthy persons acetonuria, lasting from a few hours to a few days, may appear after narcosis. In two-thirds of the cases, Legal's reaction with filtered urine gave a positive result.

2. Pre-existing acetonuria is increased by the ordinary anesthetic agents.

3. In a case of severe bromether intoxication, excessively large quantities of acetone were excreted.

4. Acetonuria after anesthesia is a symptom of increased disintegration of nitrogenous compounds.—*Journal of the American Medical Association*, Jan. 4, 1896.

ANESTHESIA AFTER COCAINIZATION OF THE NARES.

GERSTER (*Annals of Surgery*, January, 1896) reports the results of observations made in collaboration with Mayer and Theobald, on one hundred cases of anesthesia, in which he found that a preliminary application of a ten-per-cent. solution of cocaine to the nasal mucous membrane considerably diminished, in most instances, the distress and oppression felt by the patient at the beginning. In almost all the cases—excepting those of confirmed alcoholics—the patients manifested less reflex irritation than usual; they became insensible more rapidly and quietly, and with less struggling, coughing, and nausea; and especially, when ether was used, the mask could be approached to the face of the patient much more quickly, and without resistance. The later stages of anesthesia were also less disturbed than usual by interruptions. In some cases, however, in from twenty to twenty-five minutes after the first application of cocaine, a marked acceleration of the pulse-rate and facial pallor were observed, and subsequently profuse sweating. As to the after-effects, Gerster believes that the patients suffered less from nausea, vomiting, headache, and general malaise. Some few patients, however, who did not vomit at all during the first twenty-four hours, vomited a great deal on the second and third days. It is concluded that, on the whole, in view of the ease and simplicity of the procedure, of the absence of apparent risk, and on account of the undeniable diminution of the trying subjective effects upon the patient, the use of cocaine upon the nasal mucous membrane deserves extended trial.—*British Medical Journal*, March 7, 1896.

INJECTION OF STERILIZED OLIVE OIL WITH GUAIACOL AND IODOFORM IN THE TREATMENT OF PULMONARY TUBERCULOSIS.

In the *Journal des Praticiens*, February 29, 1896, BRETON, of Dijon, records his use of the mixture named in the above title, during the past fourteen months, having treated fourteen patients and used the injections altogether one hundred and fifty-nine times. After detailing the cases rather briefly, he tells us that the liquid which he employed was made as follows:

℞ Sterilized olive oil, 4 ounces;
Guaiacol, 80 grains;
Iodoform, 15 grains.

All the injections were made under the skin of the abdomen or the flanks, and no signs of erythema, induration or abscess developed.

Before the injection the skin was carefully washed with soap, alcohol, and ether, and the syringe was carefully sterilized. The injection was given slowly by means of a large needle such as is commonly employed with the syringes used for the administration of diphtheria antitoxin. The doses varied with the susceptibility of the patient. Sometimes he commenced with one cubic centimeter of the mixture; at other times he gave as much as three or four cubic centimeters at each injection. These injections were repeated every eight or ten days.

The disadvantages of the treatment are that the patient complains of considerable burning pain for twenty or twenty-five minutes after the injection, and exceptionally for longer periods of time than this. In one or two instances considerable nervousness or insomnia was developed, and in another the patient claimed that the injections produced a disagreeable vertigo.

The contra-indications which Breton observed were the presence of fever and hemoptysis. If either of these symptoms appeared he stopped the injections. He also discontinued them at the moment that any evidence of intolerance or saturation with the drugs became evident. In one instance he found that the injections seemed to increase the albuminuria from which the patient was suffering.

Among the results obtained was a distinct decrease in the pain in the chest, probably owing to the analgesic action of the guaiacol; there was also an improvement in the dyspnea, the relief from which lasted three to four days after injection. In several instances the cough became less severe, particularly the night and morning cough. The expectoration was modified, became less abundant, was not so purulent, and the examination of the sputum showed a decrease in the number of bacilli. If anything, the appetite was improved. The sweats were very much less severe, and auscultation also seemed to show that the local signs improved. Breton therefore believes that this method of treatment possesses very distinct advantages, and trusts that other members of the profession will employ it.

DIAGNOSIS AND TREATMENT OF KIDNEY STONE.

ROVSING (*Archiv für Klin. Chir.*, bd. 51, heft 4), in examining the comparative rarity of kidney stones in Denmark, states that this is mainly because the practitioners are ignorant of diagnosis. He states that the typical symptoms of kidney stone—*i.e.*, hematuria and renal colic, pains running toward the symphysis and femur, with the discharge of gravel or larger concretions—are by no means commonly observed: in only one of eleven patients observed by him were these symptoms present. Moreover, kidney colic and hematuria are often caused by other pathological conditions: sarcoma of the kidney, tuberculous or even simple chronic enteritis may occasion precisely the same symptom.

There is still another class in which typical symptoms are present, and yet on operation nothing is found. Legueu has collected twenty such cases, which he denominates "renal neuralgia." In all these cases the pain vanished immediately after operation, pointing to its hysterical nature. It is possible that hereafter these cases may be diagnosed by the fact that the urine remains sterile and normal, containing no cells.

Careful histories of Rovsing's cases are given. The author believes that by the use of every available diagnostic means it is possible in most cases to arrive at a correct diagnosis. In a certain number of cases, however, it is impossible to be sure whether the affection is stone or tumor. A direct examination of the kidney by means of lumbar incision offers a certain and safe means of settling this point. The kidney is freed from its fatty capsule and lifted out of the lumbar wound as far as possible. This allows the pelvis of the kidney to be palpated between the fingers, enabling the surgeon readily to appreciate calculi of medium size. If palpation shows

nothing, or the surgeon is still in doubt as to whether the sensation conveyed is that of stone or tumor, a sterile needle driven into the induration will settle the matter. In case there is still doubt, incision into the kidney is indicated.

Treatment of kidney stone must depend upon whether the case is suppurative or not. When there is suppuration, operation is absolutely indicated, since life is threatened. Suppuration increases the size of the stone, and the stone stimulates suppuration. Therefore the stone must be removed, and drainage must be provided. The only contra-indication is a state of chronicity so advanced and kidney destruction so great as to preclude hope of cure. In aseptic cases the operative indication is not so absolutely positive. Violent or very frequent hemorrhages or crippling pain may make interference absolutely necessary. Many patients, however, are perfectly comfortable with intervals of attack extremely wide apart.

As to palliative treatment, *i.e.* resolution by alkaline waters, the author believes that when the stone has attained considerable dimensions this treatment simply increases its rate of growth. He, however, commends very highly the simple water cure, though this will not cure; it will simply prevent growth and lessen the frequency of attacks. Operation is indicated in these cases because when the kidney is healthy and sound the prognosis is extremely good. The dangers incident to non-removal of the stone are great: it may lead to sudden anuria and suppuration, to atrophy and hydronephrosis. The danger of waiting is far greater than that of operating.

The operations are pyelolithotomy, nephrolithotomy, and nephrectomy. Pyelolithotomy possesses the advantage of occasioning but slight bleeding and no injury to the kidney parenchyma, but presents the very grave disadvantages incident to the fact that calculi in the kidney parenchyma and in the calices cannot be removed in this way, and moreover that a urinary fistula which can be healed with extraordinary difficulty or not at all is almost always formed as the result of this operation.

Nephrolithotomy, in which the kidney parenchyma is opened upon its convex border to a greater or lesser extent until the pelvis is reached, enables the surgeon to remove not only all the concretions found in the kidney substance but also those lying in the pelvis. When there is no suppuration the kidney can again be sewed, and healing by primary intention takes place. When abscess is found, this is drained, and the wound is partially sutured. In such a case fistula follows, but it heals much more readily than the pelvis fistula. The only danger in this operation lies in the bleeding, and this is not to be feared when the stone is small and can be removed through a small incision. When the concretion is large and requires a complete splitting of the organ, the hemorrhage is a serious matter in patients who have been weakened by many years of hematuria. Under such circumstances the operation should be performed while the kidney vessels are prevented from bleeding by being temporarily compressed. This compression can be exerted by the fingers of an assistant; the procedure is, however, clumsy and requires almost complete delivery of the kidney into the wound. Instrumental compression is more readily applied: a pair of forceps with long broad blades covered with rubber drainage-tubes may be employed. The objection to the use of the forceps is that the pressure may be too great, thus producing thrombosis of the vessels. Therefore Rovsing recommends a small clamp with parallel arms, each covered with a drainage-tube and provided with a strong spring. This clamp does not project from the wound when it is applied, hence is not liable to be twisted or torn off, since it follows the motions of the pedicle. By its use he has twice operated without the loss of a drop of blood. Compression, however, should not be continued over a quarter of an hour, since otherwise total anemia or distinct degeneration of the epithelium of the kidney might result.

The prognosis of the operation in sound kidneys is good: out of 115 cases collated from literature, seven died. When the technique is more perfect, the prognosis will of course be better. Bilateral successive operations have been reported successful.

Extirpation of the kidney, at one time very popular as the treatment of stone, is now done in exceptional cases only. When the stone is complicated by malignant growth or tuberculosis, it is of course absolutely indicated. Nephrectomy is indicated in all cases where the kidney substance seems to be entirely destroyed and when at the same time abundant urea from the bladder urine shows that the other kidney is functional. Under such circumstances there must be no hesitation in freeing the patient of the danger of a large suppurating pus-sac. Nephrectomy is not

indicated when marked diminution in urea suggests that both the kidneys are affected, or when at the time of exploration there is found a considerable quantity of sound kidney parenchyma and there is reason to hope that the abscess cavity as the result of drainage will finally close and allow the kidney to again become partially functional.

The prognosis of nephrectomy in cases of kidney stone is extremely unfavorable, about forty per cent. mortality. Usually death is due to the fact that the other kidney is involved too extensively to allow it to eliminate sufficiently. No doubt this great mortality would be diminished were the operation attempted only after quantitative estimation of the urea has shown that the remaining kidney is functionally active. It is always to be remembered that the patient freed from his stone is not free from danger of recurrence, hence treatment must be adopted with the idea of preventing a recurrence. Rovsing advises that the patient drink daily six glasses of boiled water.

ELECTROLYSIS IN STRICTURE.

American surgeons many years ago reached the conclusion that electrolysis for the treatment of stricture of the urethra when metallic, olivary tips seated at the end of the flexible bougie were employed, was not curative, and that it might produce a still greater stenosis of the canal. If the electrolytic action, or, we may say, affinity, were brought to bear on the stricture tissue, and then produced its absorption, the method of treatment would certainly be an ideal one. Unfortunately this result could not be produced, for when the current was sufficiently strong the electrochemical action was expended upon the mucous membrane, the disintegration or destruction of which would occur before the fibroid stenosis could be acted upon. It is thus rendered plain why the treatment was a failure, and its use very often a danger, since by it the mucous membrane, so essential to the formation of a restored urethra, was destroyed, and a ragged, cicatricial canal was left, which promptly became more stenosed than it was before the operation.

This having been our experience, and such being our conclusions, it can be readily understood that several genito-urinary surgeons of this city were both skeptical, and even impatient, when a new method of treatment of urethral stricture by electrolysis was brought to their notice by its inventor, Dr. Fort, the Professor of Anatomy of the Faculty of Medicine of Paris. In a recent essay ("Electrolyser for the Surgical Treatment of Stricture," *New York Medical Journal*, Nov. 16, 1895, and "Traitement des Rétrécessements par l'Électrolyse Lineaire," Paris, 1894) Dr. Fort describes his instrument, the technique of the operation, its immediate symptoms, and its remote results. The author of this review placed at Dr. Fort's disposal fifteen hospital cases of stricture, and has carefully studied the operative methods and the condition of the patients after operation. The electrolyser resembles in a general way Maisonneuve's urethrotome when the filiform guide has been attached and the knife has been pushed down the grooved staff. It really consists of two nearly equal parts, the distal one being the filiform guide and the proximal one a fine, soft bougie (calibre about 6 or 8, French scale), through the whole length of which there is a thin metallic wire. This wire, just before the junction of the proximal with the flexible distal portion, is bent so as to form an obtuse conical projection, which resembles the blade of Maisonneuve's instrument. This platinum blade, therefore, is the active agent in the operation. The filiform guide is passed down the urethra until the electrolytic blade (as we may call it) rests on the face of the stricture. The instrument is then connected with the negative pole of a continuous-current battery, and the positive pole, which is flat and of the size of one's palm, is placed near the penis, either on a thigh or on the lower part of the abdomen. The current is then turned on. This should be, in general, of a strength of 10 milliampères, as shown by an attached galvanometer. During the operation the electrolytic blade remains cool and is gently pushed downward by the surgeon, and in many cases traverses the strictured tissue in less than a minute; but in very firm, dense, and quite long strictures, two or three minutes may elapse before the operation is complete. In cases in which there are several strictures seated at a distance from each other, more time is consumed. Haste, however, is not at all essential in these cases; indeed, it seems to the writer that a more lasting effect is produced if the blade is allowed to traverse the tissues very slowly. In this way, in all probability, a more potential action is produced. In the judgment of the writer, better results will follow in very dense and extensive strictures if the action of the current is prolonged.

In all cases, copious irrigations with mild antiseptic solutions should be used, both before and after the operation. In this connection it may be remarked that before operation Dr. Fort threw into the bladder, in most cases using considerable force, several (even many) ounces of an antiseptic solution, without any untoward result. He did the same after the operation, seeming to care nothing about the force which he exercised upon the compressor urethræ muscle.

On the withdrawal of the blade, the evidence of the electrolytic action is seen in the little mass of disintegrated, perhaps slightly effervescent, tissue which comes away with it.

In general it may be stated that the operation is nearly painless; some patients make an outcry through fear, while others complain of a slight stabbing sensation. There may be no hemorrhage at all, or the flow of blood may be slight; it is never sufficient to cause any uneasiness. With our precise antiseptic methods Maisonneuve's operation may now be done in most cases without fear of sepsis, and, as a rule, little or no fever is present. It is remarkable to observe how free patients operated upon by Fort's method are from febrile movement or any troublesome symptom. The writer was struck by the calm confidence of the Paris professor in not sending patients operated upon to bed: indeed, in some cases he allowed them to go out of the hospital, enjoining them to return for subsequent irrigation and dilatation. This course seemed startling to cautious surgeons, who in the past, even when using intelligent antisepsis, were always a little anxious for a patient after a Maisonneuve's operation; still, in more than a dozen cases, the writer has seen no untoward result.

Another point which is to be commended is developed in the after-treatment of strictures thus operated upon by Dr. Fort. He contents himself in these cases with the passage of olivary bougies of a maximum calibre of 24, French scale. In this conservative course he has the warm endorsement of the writer, whose firm conviction it is that if the lumen of a man's urethra, after an operation for organic stricture, can be maintained at a calibre of 24, French scale, that man is a lucky individual and will be in far better condition (certainly not in jeopardy) than if he were persistently treated with much larger sounds. Judicious treatment of strictured urethræ after operations is just as important as the cutting operation itself.

From a study of the fifteen cases already mentioned, the writer is led to think that Dr. Fort's method is applicable to annular and bridle strictures in which the stricture tissue is not exceedingly dense or too exuberant. It is not a treatment, as a rule, by which a route can be tunneled through long, very dense, and copious inodular urethral stenoses. Thus, in the case of a man having a well defined, not very long or thick stricture, at four inches down the canal, this contraction readily yielded to the electrolyser, while a large, dense, inodular stricture mass at the bulbo-membranous junction was wholly unaffected, and was only traversed by Maisonneuve's guide and knife. Again, in another case, where a stenosis of the urethra began just behind the glans and extended into the subpubic course, having a length of four inches and a calibre of 8, French scale, the electrolyser could make no headway whatever. In this case gradual dilatation is producing good results.

The writer feels confident that many cases of firm stricture in the bulbous urethra may be traversed by Fort's instrument, whereas most New York surgeons would have in the past subjected them to external urethrotomy. The electrolyser may lessen the number of cases of external urethrotomy, but it will not render the operation obsolete. The electrolyser is useful, in that it decomposes a segment of the stenosed urethral canal, and thus, by destruction of tissue, gives more relief than the thin incision of Maisonneuve's blade; and it does this with precision and almost without hemorrhage. Added to this, there need be no septic complication. The writer cannot speak with authority, but it is fair to assume that if gradual dilatation be regularly, carefully, and persistently followed for a long period, the subject may be wholly free from all distressing or dangerous symptoms, and may void his urine with complacency and comfort.—*Medical News*, Feb. 15, 1896.

THE DIAGNOSIS AND TREATMENT OF PERFORATING ULCER OF THE STOMACH AND DUODENUM.

Among the more dangerous symptoms of gastric ulcer, perforation has attracted special attention. The diagnosis and the treatment of this condition are made the subject of a special study by BLUME, the results of which merit the attention of medical men in general. Of late years surgeons have busied themselves with perforation peritonitis, and occasional successful operations for perfora-

tion of the stomach have been reported. It is consequently an opportune time to review the results of the methods of treatment hitherto in vogue, and to make clear the diagnosis and prognosis of perforation of the stomach, in order to estimate the probable chances of the success of the new treatment.

There are recorded cases of recovery after perforation of the stomach into the free abdominal cavity, without operation. Fenwick and Liebermeister both describe such cases, in some of which the correctness of the diagnosis was confirmed by post-mortem examinations. The idea that extensive or diffuse perforative peritonitis need not always be a fatal disease has received support in some of the cases treated by operation. Diffuse purulent peritonitis has been cured by means of incision with, as well as without, efforts at disinfection of the peritoneum, and even after complete suture of the incision without drainage.

Blume briefly reports sixteen instances of acute and subacute cases of perforation of the stomach treated without operation. These cases were from Professor Trier's division in the Kommune Hospital in Copenhagen. All the cases were examined after death. The seat of the perforation was in the anterior wall of the stomach in fourteen cases, in the anterior wall of the duodenum in two, and twice in the posterior wall of the stomach. In fourteen of the cases the post-mortem examination showed a diffuse peritonitis. In eight cases distinct evidences of an effort to close the perforation by means of adhesions were demonstrated. The length of time between the occurrence of the perforation and death varied from less than twenty-four hours to ten days, showing that in many cases there would have been time enough to consider the treatment and eventually operate.

Blume then details four cases in which the symptoms after the perforation ran a more chronic course because peritoneal adhesions limited the peritonitis to the vicinity of the perforation. In none of these cases could a correct diagnosis have been made during life.

In a third series are reported seven cases of recovery from the perforation without operation. In all these cases the clinical data include observations that verify the diagnosis of gastric ulcer, and records of the objective signs of the peritonitis, whether it was diffuse or circumscribed; the latter was the case in four of the seven cases. Three of the patients entered the hospital forty-eight hours after the perforation, one thirty-six hours, one eighteen hours, and two less than twenty-four hours. The medicinal treatment consisted exclusively of opium and morphine. The feeding consisted in giving one teaspoonful of iced milk every fifteen or thirty minutes when the patient was awake, which quantity was gradually increased after a few days. Rectal feeding was not employed. The rationale of this somewhat unusual procedure was based upon the importance of keeping up the normal functions of the stomach in order to hinder the regurgitation of intestinal contents and their overflow into the peritoneal cavity. Blume lays great stress on this mode of feeding, and the results seem to warrant his criticism of the remark of Mikuliez that "in perforative peritonitis the physician stands as an idle observer." The importance of reliable trained nurses and of the suitable position of the patient is also emphasized.

Blume then reviews seventeen cases from the literature, especially the English, in which operation was performed. The cases are arranged topographically into four groups: (1) Perforation in the region of the pylorus and duodenum, three cases, with two deaths; (2) perforations in the posterior wall, one case, recovery; (3) perforations in the anterior wall, four cases, with three deaths; (4) perforations near the cardiac orifice, nine cases, with six deaths.

Some of the conclusions drawn from the histories of these cases are the following: The authors believe the operation should be performed as soon as possible after the perforation. Chloroform narcosis is said to be accomplished with astonishing ease. The incision is made in the median line between the xiphoid appendix and the umbilicus; transverse incisions may become necessary in order to reach the point of perforation. The treatment of the perforation itself is the essential act of the operation. The accessibility to the opening varies greatly in cases corresponding to these four groups: in group 1 the perforation is readily found; in group 2, access to the perforation is to be gained by cutting through the ligamentum gastro-colicum, when the stomach may be turned upward and the point of perforation brought into view; the perforation is easiest to find when situated on the anterior surface of the stomach (group 3), but the acuteness of the angle formed by the costal arches may encroach seriously upon the room necessary to suture the opening; in the last group, 4, the

perforation is situated high up behind the chest-wall, and, inasmuch as the stomach cannot be pulled down, the treatment of the opening is very difficult—in three of the cases, suturing of the perforation had to be abandoned as impossible, while in two cases the perforation was shut off from the rest of the peritoneal cavity by fastening the stomach to the abdominal wall, and in one a cure was obtained. The treatment of the peritonitis consists of flushing with a warm, sterile, indifferent fluid, or dry sponging with sterile gauze. Drainage of the peritoneal cavity was employed in nine of the sixteen cases in which this point is referred to; three of the nine recovered. Seven cases were treated without drainage, and three of these got well.

Comparing the cases treated medically with those treated by surgical means, Blume states that the results of the medical treatment as shown in the series of cases described by him are quite respectable, and that the possibility of a cure without operation has been definitely established, but nevertheless the secure closure of the perforation by suture holds out more definite hopes for recovery. In order to limit the operative interference to a minimum, the diagnosis should be as certain as possible, so that the incision may be made in the right place at first, and not, as has happened, between the umbilicus and the pubes, followed by exploration of the genitals, the cecum, and the ileum, before attention was directed to the opening in the stomach. Moreover, Blume strongly advocates the method of nourishment described in connection with the non-operative cases. The idea that the stomach must be placed at absolute rest and remain empty is illusory. Unless the normal secretory functions are kept at work, regurgitation of intestinal contents may result.—*Journal of the American Medical Association*, Jan. 25, 1896.

PERMANENT SUBCUTANEOUS SUTURE FOR FRACTURED PATELLA.

CANT (*Quarterly Medical Journal*, vol. iv, part 1) states that the numerous methods that have from time to time been proposed prove that the treatment of fractured patella is often difficult and unsatisfactory.

It is frequently treated by the simple method of putting the leg on a straight posterior splint and drawing the fragments as far as possible together by pads and strapping, keeping them so for about two months, and then putting the leg up in some stiff bandage for three or four months more. At the end of this time the skin is more or less fixed in a straight position, with very little power of movement, and this has to be increased by gentle exercise and massage before the leg can be of much use. Not only so, but the fragments are united by fibrous tissue, which is very likely to lengthen, leaving the knee in a weak condition.

The other methods of treatment are almost too numerous to mention, some being of such a serious nature that few surgeons care to undertake them; others in various ways unsatisfactory, mainly from the difficulty of keeping the fragments together without causing damage to the structures entering into the formation of the joint.

At the British Medical Association meeting in London, in 1895, several cases were shown in which the knee-joint had been freely opened by a large lateral flap, and the fractured patella exposed and sutured. Although the result in these cases was very satisfactory, the operation is a serious one. Not many surgeons would undertake it outside a hospital, as by some slight fault in carrying out the aseptic treatment, which might easily happen in so extensive an operation, the joint might be lost or seriously damaged.

During the last three years the writer has followed Mr. Barker's method of operating, published in the *British Medical Journal* six years ago, and although he has only had the opportunity of performing it three times, he has found it so satisfactory that he publishes an account of his cases. The method proposed is that of permanently suturing the fragments together subcutaneously, and is performed in the following manner: The skin around the knee is made aseptic, as is everything coming in contact with the joint. The patient being anesthetized, a narrow-bladed knife is passed into the joint through the ligamentum patellæ, as close to the lower end of the lower fragment as possible, and the wound enlarged slightly on withdrawing the knife—all effused blood in the joint is, as far as possible, squeezed out. A large, curved needle in a handle is then passed into the wound through the joint and behind the patella to the upper border of the upper fragment, pushed on till the point is felt under the skin, which is incised, and the needle pressed through. During this procedure the two fragments are held closely in apposition. The needle is then threaded with very stout silver wire and withdrawn, the wire thus passing through the joint behind the two fragments.

The needle is then introduced through the lower wound, passed under the skin close in front of the patella, and out of the upper wound, threaded with the upper end of the wire, and withdrawn. Thus we have the silver wire encircling the two fragments, which are pressed and rubbed together by an assistant, while the two ends of the wire coming out of the lower wound are pulled on tightly by the surgeon and twisted as close as possible to the lower fragment, cut off short, and sunk into the wound. The two small wounds are each closed by a single suture and covered with iodoform varnish, the joint encased in cotton wool, the leg fixed on a posterior splint, the patient removed to bed, and an ice-bag applied near the joint for a few days. After a week or ten days the splint is removed and the patient allowed to move his joint a little in bed. In another four or five days the patient is allowed to get up with the splint on, which is removed on his returning to bed. After a month the splint is left off altogether, and the patient allowed to walk about with a stick, and gentle passive movement is commenced. In the cases operated on by Cant, bony union has occurred; there was no inflammatory reaction of any moment, nor pain during the treatment; the movements of the joints were free and satisfactory.

The operation is so simple, and apparently so free from risk, that any surgeon may undertake it without fear. The wire passing through the joint, and the twist at the lower end of the patella, have never given the slightest trouble.

CRANIOTOMY FOR IDIOCY.

DANA (*American Journal of the Medical Sciences*, January, 1896), in an able paper on this subject, lays down the following indications for operation:

Very little hope can be entertained after a child has reached the age of four or five years, and the best chances for improvement will be obtained if the operation is done under the age of four. It has been shown that the development of the brain is divided into three equal periods: The brain increases in weight by one-third during the first three months of life; an additional increase of one-third takes place between the tenth month and about the middle of the third year; and the final increment takes place during the period between 2½ years and adult life, chiefly before the age of seven years. It is in the second third of the brain development or the early part of the last third that most improvement is recorded from craniotomy. At the same time there have been some striking successes, so far as symptoms are concerned, in children as old as nine or eleven years, but these were cases in which there had been epilepsy or paralysis or some other motor disturbance. The simple forms of idiocy with microcephalus are certainly not benefited unless operated upon early in life.

The operation so far shows that it is in the simplest forms of idiocy, with a moderate amount of microcephalus, that most improvement is to be expected. Children who have birth-palsy and decided double paraplegia, and children who have a hemiplegia with epilepsy dependent on some extravasation of blood and large sclerotic focus in the brain, are rarely helped. It has, however, occurred that even in this latter class of cases improvement has been brought about so far as the epileptic attacks were concerned.

Before operating or selecting a patient for operation the question of cretinism should be carefully considered. If the child is a cretin —that is to say, if the idiocy is due to myxedema following upon the absence of the thyroid gland—then no operation should be for a moment considered, but the child should be fed upon thyroid extract.

The question of hereditary syphilis should be carefully considered, particularly in the first months or year of life, and if there are decided indications of syphilitic exudation or of destructive change in the brain, vigorous mercurial treatment should be attempted before anything else is undertaken. The idiocy due to a hereditary syphilis, meningitis or meningo-encephalitis is not likely to be helped by operation if medical therapeutics fail.

A good many idiotic children have manifest signs of rickets or tuberculosis. In the case of rickets the operation is not necessarily contra-indicated, but the child should receive proper nourishment and medical care before it is attempted. In distinctly tubercular children it would be folly to attempt any surgical interference.

There seems to be a very great difference among observers as to what constitutes microcephalus. There is generally a rather small head in these cases of idiocy, but distinct microcephalus is rare. When it exists it is doubtful if operation does any good, because here there is usually very great lack of brain development.

Dana appends a table in which he shows that the operation of craniotomy for idiocy is still justifiable in a certain selected class of cases. He shows that by perfected methods of operating the danger to life is under five per cent., and will probably become still less. The clinical reports quoted show improvement after operation too often for the facts to be ignored, even allowing for the happy therapeutic temperament of the operating surgeon; and in his personal experience one-half of the recovered cases have been improved.

The method by which improvement is brought about is largely a surgico-pedagogic one. All those who have had experience in educating idiots lay stress on the importance of special pedigogics; and craniotomy belongs, in a measure, to this class of therapeutic procedure. It may have some additional value by stimulating the circulation and nutritional activity of the brain.

The cases in which operation is indicated are generally those of cerebral agenesis, rather than those having extensive sclerotic lesions and palsies. The operation may sometimes be repeated with benefit; and the results are not always immediate, especially so far as the cessation of the fits is concerned.

A CASE OF MEMBRANOUS CYSTITIS WITH ACID URINE.

SAVOR, of Chrobak's clinic (*Weiner Klin. Woch.*, Oct. 31, 1895), records this case with its bacteriological investigation. The patient was a woman of fifty-eight years, admitted for an abdominal tumor of eighteen years' standing. For the last year she had suffered severe pain in the hypogastrium, with incontinence of urine, which dribbled away as she walked. The urine was slightly turbid, acid, and contained a trace of albumin and a few pus-corpuscles. Laparotomy was performed, and the tumor found to be a tubovarian cyst, beside which was a primary carcinoma of the tube which was partly necrotic and so adherent that its enucleation was deemed impossible. The uterus was therefore amputated supra-vaginally, its stump treated extra-peritoneally, and the remains of the cyst drained from without. Four days after the operation, without catheterization having been done, there was an acute exacerbation of the cystitis, but the urine remained acid. On the eighth day the purulent urine contained numerous pieces of membrane, of which the largest, measuring four by two inches, was removed by the catheter, the eye of which it had obstructed. The urine was faintly alkaline, but not ammoniacal. The cystitis improved with persistent washing out, the membranes disappeared in a week, and three months after the operation the cystitis was slight but the urine still contained a large number of bacteria. Microscopically the membrane was found to consist of a number of pus-cells enclosed in a fibrinous meshwork; there were here and there a few epithelial cells, but no muscular elements. Bacteriological examination revealed the *Bacterium coli commune* in pure culture; this was also easily demonstrable in stained sections. Repeated experiments with the bacteria failed to produce membranous inflammation in rabbits; the result was either general infection and death, or a purely local lesion. Nevertheless, as no other micro-organism could be found in the cultivations or sections, Savor considers that the *B. coli* must be held to have caused the cystitis. He points out that this microbe has but little power of decomposing the urine, so that in the rare cases of cystitis due to this cause an acid reaction is almost constant. In his own case the temporary alkalinity was no doubt due to the large amount of pus, since it gave place to permanent acidity as soon as the quantity of membranes began to diminish; and the absence of ammoniacal reaction excludes decomposition of the urine as the cause of the cystitis.—*British Medical Journal*, Feb. 1, 1896.

TREATMENT OF ACUTE OTITIS MEDIA AND SUPPURATIVE MASTOIDITIS.

HESSLER, of Halle, in a paper on the above-mentioned subject (German Otological Society—*Archiv für Ohrenheilkunde*, September, 1895), states that in acute otitis media, when the membrane is imperforate, he makes a large curvilinear incision in the membrane extending from its anterior border beneath the malleus to the middle of the posterior periphery. Syringing is strictly forbidden in all acute cases, and the patient is told to mop the ear gently with cotton as often as necessary to keep it clean. In no instance must the meatus be kept stopped with cotton, as such treatment favors retention of pus. Inflation of the tympanum in the acute stages is strictly forbidden, as this procedure may produce further inflammation by infection from the naso-pharynx. Boric-acid insufflations are also forbidden, as they become un-

necessary as a prophylactic against infection from the auditory canal, if syringing be avoided in acute cases. If secondary inflammation of the mastoid occur, Hessler advises immediate chiseling, opening of the process by Schwartze's method suggested for acute cases. By this means all cariously softened bone is entirely removed from the aditus and antrum by means of the chisel, great care being exercised not to injure the auditory ossicles. The opening in the bone varies from five to eight centimeters in width. The wound should not be irrigated, but simply lightly tamponed with iodoform gauze if there is no parenchymatous hemorrhage; if the latter occur, the wound may be packed more firmly with iodoform gauze. According to the degree of moisture in the dressings should the latter be changed in one and a half to three days. At such a time any moisture may be mopped from the wound by long strips of sterilized gauze. The auditory canal should be left open. As iodoform gauze hinders granulation, the later dressings should be simple sterilized gauze.

In the discussion which followed, PANSE, of Dresden, agreed in the main with Hessler, but thought that in no instance should patients be allowed to mop their ears with cotton or use any form of instrument upon their ears, which they never learn to do aseptically. Panse places strips of iodoform gauze in the auditory canal in cases of acute discharge, allowing the secretion to run into a bandage, which he changes as often as is necessary, and pursues this plan as long as the strip of gauze is moist as far out as the meatus.

BARTH, of Marburg, asserted that the plan of treatment recommended by Hessler had been employed in acute otitis media, in Lucae's clinic in Berlin, for twelve years.

Dr. BURNETT, of Philadelphia, remarked that it was strange that we had heard so little of so good a plan until Gradenigo and Pes and others demonstrated that there was no other rational method of treatment in the light of our present bacteriological knowledge of the origin and course of infection of the middle ear in acute otitis media.

STACKE, of Erfurt, stated that for five years he had operated under strict asepsis, avoiding in acute otitic suppurations not only syringing, but also rough mopping on the surgeon's part, and permitting absolutely no treatment by the patient. Often one dressing of the ear was sufficient to absorb all the secretion thrown into the auditory canal. After opening the mastoid cavity he prefers to keep the wound open in its outer portions in order to inspect the deeper parts as long as he may deem necessary.

LEUTERT, of Halle, stated that in the clinic of Schwartze syringing is not done in acute otitis media. It is best, however, to keep the auditory meatus closed in order to prevent entrance of air.

BRIEGER, of Breslau, expressed himself as in favor of dry cleansing with sterilized cotton mops in acute otitis media. A tampon in the auditory canal cannot, in his opinion, lead to retention of pus; but retention of pus may easily ensue in the mastoid wound, if closure on the outer side is allowed before healing from the bottom takes place. Hartmann, of Berlin, has long ceased to employ inflation in acute otitis media, and has spoken against irrigation of the wound after mastoid chiseling. A bandage should be retained for a long period only in an aseptic wound, while in septic wounds the dressings should be changed as often as possible. Long-continued tamponing delays healing.

NOLTENIUS, of Bremen, said he did not think tamponing the auditory canal with absorbent cotton or gauze after paracentesis would lead to retention of pus; after mastoid operations he considers it important to effect healing from the bottom.

REINHARD, of Duisburg, asserted that in the Schwartze school irrigation is not practiced in acute suppurations.

WALB, of Bonn, considers inflations by either Politzer's method or the catheter or any other method as not only useless but as really dangerous, as by such means pus may be forced into parts of the middle ear previously unaffected, as he pointed out six years ago at a meeting of aurists in Heidelberg, and was unanimously endorsed by those present.—*American Journal of the Medical Sciences*, February, 1896.

THE TREATMENT OF FIBROID TUMORS OF THE UTERUS.

PENROSE (*University Medical Magazine*, January, 1896) concludes that castration, if thoroughly performed in suitable cases, arrests hemorrhage, stops the growth of the tumor, and brings about atrophy, in a great majority of the cases—probably in ninety-five per cent. The suitable cases for castration are hard fibroid tumors of small size, of such development that no pressure is produced, and when there are no marked subjective or reflex symptoms.

Hysterectomy is advisable in the vast majority of cases of fibroid tumor of the uterus —in all cases in which there are urgent symptoms from pressure, or urgent subjective symptoms referable to the uterus; in all fibro-cystic, edematous, and myomatous tumors; in all tumors of intra-ligamentous or subperitoneal growth; in all large tumors which have become decidedly abdominal; in all cases in which we cannot safely and surely remove all ovarian tissue and the whole of the Fallopian tube.

Castration should never be undertaken unless the operator is prepared to perform hysterectomy, should this be found necessary.

The expectant plan of treatment should be reserved for the comparatively few cases of small fibroid tumor of slow growth in young women where the growth is not intra-ligamentous and does not produce pressure on pelvic nerves, rectum, ureters, or bladder; and where there is not much suffering from backache, headache, or hemorrhage, especially if the woman is anxious for children, operation may be deferred. Though the chances of conception are diminished, the course of pregnancy difficult and uncertain, and labor liable to be complicated, yet it should not be forgotten that conception and delivery at full term often occur even in case of large fibroid tumors of the uterus. In older women, however, or in women who have been married for several years and have not conceived, this consideration lacks force, and operation is advisable if there is much hemorrhage or suffering. It should always be remembered that without operation all the symptoms will probably increase in severity, at any rate until the menopause, and that the menopause will be delayed.

In the case of an old woman who has passed the menopause, in whom the fibroid tumor has stopped growing, and in whom there is no discomfort from the size of the tumor or from pressure, operation is not indicated.

We can choose one of two operations, the value of both of which has been demonstrated by large experience: salpingo-oöphorectomy and hysterectomy. The choice of operation depends upon the character of the growth with which we have to deal. There are several varieties of fibroid tumor of the uterus, which differ from each other in structure and in location or in direction of growth. The cystic fibroid tumor is of rapid and indefinite growth; the growth continues after the e ı op ause and is not arrested by the operation of oöphorectomy. Experience has shown that oöphorectomy is not followed by as good results in case of edematous fibroids and in soft myoma as in the harder forms of fibroid tumor.

CURETTAGE IN THE TREATMENT OF TRACHOMA.

STROUSE (*Medical News*, Jan. 11, 1896) discusses briefly the procedures which are most extensively employed in the treatment of trachoma, and then describes a method which in his hands has proved superior to all others and has practically taken their place in his practice. His remarks apply chiefly to the severer forms of trachoma, although it must be remembered that even in the milder varieties recourse must now and then be had to radical measures.

Probably the method which still enjoys the widest popularity among ophthalmologists is the application of such caustics as the solid stick of sulphate of copper or pure alum. This serves a useful purpose in milder or more recent cases, but after it has been given a fair trial it is often found that, after a certain amount of apparent improvement has been effected, the disease remains stationary, and in that event more radical measures are demanded. At any rate, even in favorable cases, the treatment by caustics is usually protracted and requires a considerable degree of perseverance on the part of the physician and his patient, while it is often quite painful, especially at the commencement.

Among the operative procedures the one most in vogue is expression. The cruder way of practicing this procedure consists in squeezing out the contents of the follicles by means of the finger-nail, or the copper stick when applying it. This, however, is less thorough and effective than the use of one of the various forms of forceps devised for this purpose, among which the roller-forceps of Professor Knapp is the most applicable. Expression has certain disadvantages which greatly detract from its value, chief among which are the following: The forcible expulsion of the trachoma follicles produces extensive laceration of the delicate conjunctival tissues; the deeper-seated follicles are evacuated with difficulty; the pressure required to eradicate the disease thoroughly, especially if, as frequently happens, the roller of the instrument does not rotate, but glides over the surface, is so considerable that the underlying tissues are subjected to severe contusion, which re-

tards healing of the affected part; in consequence of this the reproduction of normal epithelium, after expression, is impaired, and an excessive amount of cicatricial tissue produced; moreover, certain parts of the conjunctival sac cannot readily be reached with the roller-forceps. Aside from these objectionable features, the pain attending this method is so marked as to necessitate the employment of general anesthesia.

Among operative procedures in the treatment of trachoma, grattage, next to expression, is probably most often resorted to at the present day. As commonly practiced, this operation consists essentially in scarification of the conjunctiva with an instrument provided with a number of sharp blades, followed by rubbing with a stiff brush moistened with a strong solution of bichloride of mercury (usually of the strength of 1:500). The brushings are repeated once daily for a week, at the end of which time a cure is sometimes effected. An extensive trial of this method has led the majority of ophthalmic surgeons to discard its use, as it has been demonstrated that its disadvantages more than counterbalance whatever benefits may be derived from it. Extensive cicatrization is apt to result in consequence of the numerous and necessarily deep incisions, producing contraction of the conjunctiva of the lid, and entropion. Very little of the normal conjunctival membrane is visible after the operation, its place being taken by a cicatricial mass. Equally common sequelæ are cicatricial bands between opposing surfaces of the ocular and palpebral conjunctivæ. This method, like expression, requires general anesthesia, as it is attended with so much pain that the local application of cocaine is unavailable.

Excision of the retrotarsal fold may be dismissed with a few words, as it is an incomplete and unsatisfactory method, and is but rarely employed. The same objections apply to puncture of the trachoma follicles with the galvano-cautery point, as well as to abscission and evacuation of the follicles with the needle, and similar procedures.

Recognizing the uncertain results derived from the methods above described, the author was led about five years ago to devise a plan of procedure which in his hands has proved its superiority over all others with which he is acquainted. This method consists essentially in curettage of the trachomatous tissue with a sharp curette shaped like a cataract-spoon. The cutting edge of the instrument measures about 1.5 millimeters in width, and is ground sharp in its entire circumference, while the back of the curette is flat and smooth. The shank should be elastic and yet sufficiently firm to withstand ordinary pressure, and is attached to a metal handle, so that the instrument can be properly sterilized.

After thoroughly cocainizing the conjunctiva, the lower lid is everted and rapidly scraped over its entire extent. Then the upper lid is everted and held between the thumb and finger of one hand, while the curette is passed up into the fornix, and this part of the conjunctival sac is scraped, care being taken to penetrate all the folds. The everted portion of the lid is treated last. During the entire procedure, which occupies but a few minutes, an assistant mops the lids with absorbent cotton dipped in an antiseptic solution (a saturated solution of boric acid or a bichloride solution 1:10000).

When the hemorrhage, which is only slight, has ceased, we see a surface which is smooth except for a number of depressions or small cavities. These are deep or shallow, according to the seat of the trachoma bodies contained therein. The surfaces are now thoroughly washed, and touched with a two-per-cent. solution of nitrate of silver. This is really the only part of the operation that elicits any pain, and by the instillation of a few additional drops of cocaine even this may be entirely avoided.

The after-treatment consists in the application of iced pads for thirty to sixty minutes, and by the end of this time any reaction will be found to have subsided. That the reaction, however, is inconsiderable, is shown by the fact that ignorant dispensary patients, who frequently neglect to obey instructions, rarely complain of any inconvenience following the operation. The patients are ordered to return every other day, when they are again treated with the silver solution. The latter has given the writer better results than the 1:500 bichloride solution, which he first employed when it was recommended by the advocates of grattage.

After the eighth to tenth day, when the epithelium is completely regenerated, and the cavities left by the trachoma follicles have completely granulated and are flush with the surface of the conjunctiva, he sometimes discontinues the silver application and resorts to the copper stick. This treatment is continued for the following week or two, by which time the patients are usually com-

pletely cured. The palpebral conjunctiva is now smooth, the thickening and induration of the lids have markedly subsided, and pannus, if it has existed, shows a tendency to subside without further treatment, or even may have disappeared completely.

If at the end of four weeks the cure is not complete, the curetting should be repeated. The second operation is even simpler than the first, as it is not necessary to curette so deeply and extensively, and naturally the reaction is even slighter than before.

It might be supposed that the removal of the conjunctival epithelium and deeper tissues with the sharp curette would be followed by extensive formation of cicatricial tissue; but as a matter of practical experience this is not the case—the epithelium is almost completely regenerated, and the subconjunctival tissues assume a soft and pliable character except where scars had resulted from deeper-seated trachoma follicles.

Indeed, this seems perfectly explicable when it is remembered that the curettage of granulation-tissue, and necessarily of more or less of the deeper structures, is constantly resorted to in other mucous surfaces of the body, with the result of a perfect restoration of the function of the affected membrane.

In conclusion the author emphasizes the following advantages which curettage possesses over other methods advocated for the treatment of trachoma:

Its uncomplicated technique, and the rapidity with which it can be performed.

Its comparative freedom from pain, enabling us to dispense with general anesthesia.

The minimum injury inflicted upon the conjunctival and subjacent tissues.

The absence of inflammatory reaction after operation, permitting the patient to follow his usual occupation without discomfort. This is an important point in its favor in comparison with operative procedures which confine the patient to his room for several days.

The simplicity of after-treatment, which is of importance in view of the fact that the majority of trachoma cases occur in the lower walks of life.

The radical character of the operation, recurrences being rarely observed.

REPORT OF A CASE OF DISLOCATION OF THE TESTICLE INTO THE PENIS.

RAMON GUITÉRAS, in the *Medical Record* of January 4, 1896, details an interesting case of this nature. The patient was referred to him on account of a deformed condition of the external genitals following an accident. Two months before coming under Guitéras's observation he had slipped and fallen and the wheel of a heavily laden cart had passed up between his legs and over his left pubic bone, groin, and flank, on to the left side of his thorax, when it glanced off.

After the accident he tried to get up, but found that he could not support himself on his left leg, which seemed to be limp and powerless. In addition to this he felt a severe pain in the region of his left hip and loin where the wheel had passed. He was taken to a hospital, where it was found that the sixth and seventh ribs had been fractured in the axillary line, that the region of the left hip was very much contused, and that the wheel had cut through the soft tissues in the left pubic region, lacerating the superficial external pudic, the superficial epigastric, or some other of the small branches of the femoral artery in that region, from which a profuse hemorrhage had taken place. Later in the day his scrotum, penis, and the adjoining region of his left thigh and hip were seen to be much swollen and bluish-black in color, giving rise to a considerable amount of pain. An ice-bag was therefore put upon his genitals, and he was made as comfortable as possible.

At the end of a week the swelling and pain had diminished to such a degree that the ice-bag was discontinued. The patient remained in bed for about three weeks, during which time the principal pain seemed to be in his hip, although his penis felt sore and sensitive. On attempting to rise he noticed a feeling of faintness, accompanied by nausea and dizziness.

On leaving the hospital at the end of three weeks he still felt weak. He went home and remained on his back two weeks longer. At this time he came under Dr. Guitéras's care.

The patient was a large, powerfully built man, aged fifty-two, a piano-mover by occupation. His general condition seemed to be good, and he said he felt well with the exception of some pain in his hip and a feeling of pain and discomfort in his penis, which was especially marked when moving about.

On questioning him in regard to the condition of the functions of his genito-urinary organs, he replied that he had had no difficulty in urinating since his injury, but that he had had no erections since that time, although he had considered himself well preserved and vigorous before the accident.

Examination revealed a scrotum which

looked flat and empty in its lower portion, while in the upper part of the sac a nodular mass was present; over the upper and anterior surface a small wound was noticed, which had not as yet entirely healed. This had been caused by the passage of the wheel and was the seat of the hemorrhage already alluded to. The penis looked flattened and abnormally wide at its base, where it measured 5½ inches in circumference and two inches in width. The left side of the organ appeared to be especially bulging from behind the glans to the pubes, and on palpation gave the peculiar elastic feel resembling that known as testicular. On more careful manipulation the swelling was observed to be oval in shape and directly connected with the nodular mass at the peno-scrotal junction on the left side. On elevating the penis to obtain a view of its under surface, the deformity was much more marked and the relation between the mass in the left side of the penis and that in the scrotum was more clearly discernible. Palpation of the scrotum below the nodular mass revealed an elongated body extending from this point down to nearly the bottom of the scrotal pouch, where it was felt to be again slightly expanded.

The case was evidently one of dislocation of the testicle into the penis, and the points of interest were: first, how it had been accomplished; and second, how to reduce it. From a recollection of the anatomy of the parts it was evident that the testis had been torn away from the body of the epididymis and the globus minor, had been turned upon the globus major, and then had been forced through the parietal layer of the tunica vaginalis and beneath the dartos sheath of the penis.

As it had been for so long a time displaced and was evidently bound down by adhesions, it did not seem probable that it could be reduced excepting under an anesthetic, and probably not even then without resorting to operative interference. On the following day the patient was anesthetized and reduction was unsuccessfully attempted by external manipulation. An incision was then made over the lateral aspect of the penis corresponding to about the centre of the mass, from an inch behind the glans to the peno-scrotal junction on the left side. The integument and the dartos sheath having been cut through, the testicle was brought into view lying beneath. An attempt was then made to push the testicle down into place, but the adhesions were found to be so strong that this could not be accomplished. Accordingly a second incision was made, from the peno-scrotal junction on the left side down over the part of the scrotum covering the globus major of the epididymis, and the adhesions (which were principally about the globus major and that part of the testicle adjoining it) were broken down. This same incision opened the upper part of the pouch of the tunica vaginalis, so that after the testis had been drawn out of its place of confinement an attempt was made to push it once more into its proper abode. The sac, however, seemed to be too small to contain it, due probably either to inflammatory changes or to having shrunk on account of the absence of the gland during this short period; it was necessary, therefore, to stretch it with the fingers before the testis could be made to enter.

After the testis had been replaced and the contents of the scrotum were once more in normal relation to one another, they were carefully washed with a warm solution of boric acid and their coverings put back into place.

The dartos sheath of the penis was united with a continuous catgut suture, and the skin sheath with silk, while in the scrotum the tunica vaginalis was united with a continuous Lembert suture of catgut, and the integument and dartos with silk. The dressings were of the usual order.

The patient stated that he had an immediate feeling of relief on coming out of the ether after the operation. Three days later some of the stitches were removed, and at the end of six days the remainder were taken out. The patient was then able to stand erect and walk about with comparative ease; the soreness in his penis had disappeared, and with the exception of a slight pain in his hip he felt entirely well.

A month later the patient reported that his genital organs were the same, with the exception of a slight amount of tension noticed on the injured side of his penis when in a state of erection, due probably to the cicatrix left after the operation. He also stated that he had had intercourse, and the accompanying ejaculations were without pain. His hip, however, was still weak.

SURGICAL HINTS.

When a wound, either accidental or operative, shows signs of infection, never wait for suppuration. Immediate incision, thorough disinfection, and drainage if necessary, re-

lieve pain, shorten the duration and prevent extension of the inflammatory process.

In draining a suppurating wound, never cork it up by packing gauze in it. The smallest strip that will reach the bottom of the cavity, very loosely applied, is the best.

Constitutional treatment is all-important in all forms of diffuse surgical inflammations.

Recurrence of carbuncles and boils suggests an examination of the urine for diabetes.

See that patients have a good night's sleep the night before an operation.

Skin-grafting will not succeed upon an unhealthy surface.

Watch patients with burns of the pharynx and larynx; be ready to operate at once. Severe dyspnea may occur with appalling suddenness. If the patient is getting cold and feeble, his ability to feel pain has greatly diminished. Waste no time in anesthesia in emergency tracheotomies.—*International Journal of Surgery*, January, 1896.

ICHTHYOL IN THE TREATMENT OF BLENNORRHAGIA.

CANOVA, taking this theme as a basis for his Doctorate in Medicine, announces the following conclusions founded upon a careful search of literature and considerable clinical experience under Balzer: Ichthyol solutions of one- to two-per-cent. strength, exceptionally 2½-per-cent., occasioned very little pain or inflammatory reaction. An occasional slight vesical irritation was the only reaction noted. Secretion was always promptly and beneficially influenced, especially in subacute cases. The employment of the drug from the beginning of the attack was not so satisfactory. The gonococci disappeared promptly. Ichthyol, from its analgesic, antiphlogistic, absorbent and antiseptic properties, is perhaps more serviceable than any other medicament in the treatment of blennorrhagia. Lotions of this drug possess a distinct advantage over nitrate of silver and potassium permanganate in that they are almost completely painless. Owing to this property the medicament can be employed from the very beginning of the attack, not with the idea of aborting the disease, but rather in the hope of lessening its severity and preventing its extension to the posterior urethra. Two irrigations a day to the anterior urethra represents the treatment. If no beneficial effects are observed as the result of these washings, they should be suspended. During the height of inflammation it is well to suspend these irrigations. During the subsiding stages, ichthyol will cure.

SERUM INJECTIONS IN SECONDARY SYPHILIS.

VIEVOROVSKY (*La Semaine Médicale*, xv, 1895, p. 186) treated five patients in this stage with subcutaneous injections of serum obtained from the blood of robust persons suffering from tertiary disease. The serum was filtered and 0.5 per cent. of carbolic acid added to it. The quantity injected varied from four to twenty cubic centimeters, the number of injections, given usually in the scapular region, averaging twenty-one to twenty-three for each case. No other treatment was used, and the author states that the general condition improved rapidly; healing of the initial lesion and disappearance of the eruption were hastened. Mucous patches were most rebellious to treatment, and the relapses which occurred yielded less readily than the early symptoms.—*Journal of Cutaneous and Genito-Urinary Diseases*, February, 1896.

DIAGNOSIS OF FRACTURE.

As is well known, difficulties are occasionally experienced in detecting the presence of crepitus in cases of fracture. Availing himself of an old idea of Disfranc's, VIANA has suggested that this difficulty might be obviated by resorting to auscultation. The procedure adopted by him is as follows: The stethoscope is applied to the immediate vicinity of the suspected site of the fracture; percussion is then practiced close to the stethoscope, either by the surgeon or by an assistant, with a percussion hammer and pleximeter. If now the pleximeter be carried along the axis of the bone, at the moment it passes the place of fracture an abrupt change in the percussion resonance is noted. Viana experimented on eleven cadavers in fractures of the extremities, the skull, and especially the ribs; he considers his method of chief value in the latter class.—*Gazzetta Degli Ospitali*, No. 63, 1895; *International Journal of Surgery*, February, 1896.

TREATMENT OF TUBERCULOUS DISEASE OF THE KNEE.

CALOT and DECHERF (*Rev. d'Orthoped.*, No. 1, 1896) hold that white swelling of the knee in the adult should be treated by prompt

excision. In the infant, orthopedic treatment, either alone or aided by intra-articular injections and antiseptic dressings, will always give good results, provided the patient can be kept in favorable conditions of climate, hygiene, and diet. The affected limb cannot be satisfactorily maintained at rest except by an extensive plaster splint applied to the whole of the limb and also to the pelvis. While in some cases the limb remains in a good position during the whole period of treatment, there are others in which displacement will inevitably occur after removal of the splint. In such cases, if this tendency cannot be overcome by ordinary means, the only plan of assuring a straight limb will be to open the joint, remove the articular extremities, and fix the bones by suture in a good position. This treatment, the authors assert, is not only the most perfect, but also the most simple and rapid.—*British Medical Journal*, Feb. 1, 1896.

Reviews.

ELECTRICITY IN ELECTRO-THERAPEUTICS. By Edwin J. Houston, Ph.D., and A. E. Kennelly, Sc.D. New York: The W. J. Johnston Co., 1896.

When this book was received, the reviewer picked it up with more than ordinary interest, recognizing the fact that from their great reputation as electricians the authors might have discovered some new method of presenting what to physicians is rather a difficult subject. We have, however, read the volume with considerable disappointment—not because it does not clearly describe the physics of electricity, but rather because it is "like the play of Hamlet with Hamlet left out." After a brief and interesting historical summary of the facts in connection with the development of electricity, chapters are devoted to the consideration of the physical facts which we know concerning it, and after this a considerable amount of electrical apparatus is described, but from first to last we find nothing which justifies the title "Electro-therapeutics." Perhaps it could hardly be expected that persons who do not profess to have a medical training should provide the profession with a satisfactory work upon this topic, particularly as in this Series they have already contributed ten volumes of this size upon such subjects as "Alternate Electric Currents," "Incandescent Lighting," "Electric Street Railways," etc. The volume is therefore not to be purchased by physicians desiring to learn of the practical application of electricity to disease, but by those who desire to have clear ideas of the elementary facts in connection with electrical science.

THE YEAR-BOOK OF TREATMENT FOR 1896. A Critical Review for Practitioners of Medicine and Surgery. Lea Bros. & Co., Philadelphia and New York, 1896.

The English authors who have compiled this year-book are no less eminent men than those who contributed to its pages in previous years. That it is a distinctly English volume, on sale by American book-sellers, is evidenced by the fact that in the last part, which is called a supplement, description is given of instruments and remedial preparations made solely by English manufacturers whose American agents are not mentioned. With this exception, however, the application of the book to practical every-day life is as readily made in this country as in England, and much exceedingly valuable information will be found concentrated in its pages. There are no less than twenty-five departments, extending from diseases of the heart and circulation to the various specialties, and these in turn are followed by a selected list of new books, new editions and translations, the supplement that we have named, an index, a list of the authors quoted, and an index to subjects. We note that a number of American books which are well known are not included.

DIETS FOR INFANTS AND CHILDREN IN HEALTH AND DISEASE. By Louis Starr, M.D. Philadelphia: W. B. Saunders, 1896.

This is a small volume, a little too thick to carry comfortably in the coat-pocket, made up of pages which are perforated in such a manner that they can be readily torn out of the binding. The first part consists of "Diet in Health for Artificially Fed Infants and for Children," and a certain number of printed slips with blank spaces for the various ingredients then follow. On one side of the slip is space for the name of the child, the name of the doctor, and general directions, and on the other side space for the more lengthy details which are to be given to the nurse or the mother as to the preparation of food. In the second part of the book we find a similar number of perforated pages dealing with diet in health and disease, in which additional information is given in much the same manner, except that the bills of fare are printed in detail.

If there is one thing about which physicians are apt to be careless, and even igno-

rant, it is the regulation of their patients' diet and the methods which should be resorted to in the preparation of foods. This book will therefore prove of very great value to those whose practice is largely confined to children's diseases, and in addition the full list of various nutritious preparations which is to be found in the last part of the volume can be employed with advantage in preparing diet lists for the sick of any age.

The flexible binding in which the publisher has put together these perforated leaves makes the book handy for ready reference and easily carried, and the reputation which the compiler has as a careful practitioner and authority on diet ought to make this new venture in medical publication a decided success.

URIC ACID AS A FACTOR IN THE CAUSATION OF DISEASE. By Alexander Haig, M.D., F.R.C.P.
Philadelphia: P. Blakiston, Son & Co., 1896.

We have already reviewed in the THERAPEUTIC GAZETTE the English edition of this book which was sent us by the author, and we print this brief notice in order that our readers may know that so valuable a volume can now be obtained from a well known firm of American medical publishers.

THE NATIONAL FORMULARY: New and Revised Edition. Supplement to the National Dispensatory.
Lea Bros. & Co., Philadelphia and New York, 1896.

As is known to many physicians and all pharmacists, the National Formulary consists of a list of formulas designed for the preparation of a large number of useful pharmaceutical combinations which the Committee of Revision of the United States Pharmacopœia have not seen fit to introduce into that authoritative work.

In order that physicians and druggists who possess the National Dispensatory may also have the Formulary, the publishers of that well known work (Messrs. Lea Bros. & Co.) have now issued the National Formulary as an appendix in the same style of printing and with pages of the same size. Every druggist should possess the National Formulary, and nearly every physician would find his methods of prescribing rendered more convenient if he also possessed this valuable publication.

DENTAL MATERIA MEDICA AND THERAPEUTICS. By James Stocken. Fourth edition.
London: H. K. Lewis, 1895.

This is a very small volume, scarcely more than a quiz book, which we imagine might be useful to students of dentistry who desire to know something of the physiological effects and dosage and therapeutic powers of remedies which are less frequently employed by physicians than by dentists. A very limited list of drugs completes the volume, which closes with a number of prescriptions useful in dental practice, a chapter upon Artificial Respiration, and one upon the subject of Prescribing which only covers a little more than half a page.

MODERN MEDICINE AND HOMŒOPATHY. Two Addresses by John B. Roberts, A.M., M.D.
Philadelphia: Edwards & Docker Co., 1895.

The titles of the two addresses which this volume contains are "Points of Similarity between Us and Homœopathic Physicians," and "The Present Attitude of Modern Medicine and Physicians toward Homœopathy." The first is the annual address of Dr. Roberts as President of the Philadelphia County Medical Society in 1892, and the second the presidential address to the Medical Society of the State of Pennsylvania for 1895.

The volume is a small octavo of about 70 pages, and we are told by the author that he has written these addresses only after very careful study of contemporaneous homœopathic literature. Dr. Roberts on the one hand shows that more friendly feeling should exist between members of the regular school of practice and homœopathic physicians, and on the other takes occasion to point out that in some respects the homœopathic methods of treatment are so diametrically opposed to what we believe to be rational therapeutics that consultations in some instances at least must be devoid of benefit to both the physician and patient.

DON'TS FOR CONSUMPTIVES. By C. W. Ingraham, M.D.
Binghamton, N. Y., 1896.

We are told in the preface of this small volume of a little over 200 pages that the main objects of the work are to outline to the physician and to the pulmonary invalid under his care a method of general management which will yield the patient most substantial and permanent benefit both in respect to the curative forces of nature and the means of protection against the further spread of the disease. There is no doubt that the general dissemination of information such as this book contains will be of very great value. Directions are given in regard to the danger of using rooms, clothing or articles that have been used by consumptive patients, and the author even goes so far as to point out the danger of infecting domestic animals and the consequent tertiary infection of other human

beings. Advice is also given in regard to exposure of the tuberculous patient to draughts and colds, as to his diet and the proper methods of taking food, both as to time and the character of the food; and hygienic rules are established for the heating of houses in which tubercular patients are residing. In the latter part of the volume is a date sheet so arranged that the progressive gain or loss of flesh in consumptives may be carefully recorded.

So little is known by the general laity in regard to consumption, except what they learn from quacks and other irresponsible persons, that books pointing out in reasonable terms the duties of the public towards consumptives and the duties of consumptives toward the public are to be looked on with much favor.

MANUAL OF MEDICAL JURISPRUDENCE AND TOXICOLOGY. By Henry C. Chapman, M.D. Second, revised edition. Illustrated.
Philadelphia: W. B. Saunders, 1896.

The second edition of this little book of about 250 pages has had little new added to it, we are told by the author in his preface, excepting a brief bibliography concerning the statements made in the text, and several new figures and tables. As a small hand-book designed to give the physician general information in regard to the medico-legal facts which he ought to know, the volume may be recommended, although it should be remembered that larger works such as that of Taylor, edited by Clark Bell, should always be referred to as standards for practical medico-legal work.

We cannot see much usefulness from a medico-legal point of view in introducing the colored plates showing the fetal circulation, although plate I showing the corpus luteum is of course of medico-legal value.

LEPROSY IN ITS CLINICAL AND PATHOLOGICAL ASPECTS. By G. M. Hasen, M.D., and Carl Looft, M.D. Translated by Norman Walker, M.D.

This is an admirable monograph of the subject of which it treats, copiously illustrated by many full-page photographs, and giving the views of well known authorities in regard to leprosy in a well condensed manner. We are interested to note that in addition to the larger number of plates showing microscopical views of sections from leprous cases, no less than twenty pages are devoted to a careful summarizing of the means at our disposal for the treatment of leprosy, and, while none of these can be considered as absolutely curative, it is encouraging to know that modern therapeutics can at least attempt with some degree of success to modify the severity of the symptoms of this terrible malady.

DIAGNOSIS AND TREATMENT OF DISEASES OF THE RECTUM, ANUS, AND CONTIGUOUS TEXTURES. Designed for Practitioners and Students. By S. G. Gant, M.D. With Two Chapters on Cancer and Colotomy by Herbert William Allingham, F.R.C.S., Eng. Illustrated with sixteen full-page chromo-lithographic plates and 115 wood-engravings in the text.
Philadelphia: The F. A. Davis Co., 1896.

This work is one of modest pretensions, the author holding that it represents simply an effort to give to the practitioner and student of medicine a concise yet practical book. There is a very brief anatomical description, followed by a chapter on Symptomatology. Under the heading "Examination of the Rectum and Anus," it is surprising to note that Kelly's admirable work in this direction receives no comment. In view of the large number of fatalities occurring when chloroform is used, it might have been well to avoid the inference that this is the anesthetic of choice. The various diseases of the rectum are then taken up in successive chapters.

The final two chapters of the work are written by Allingham. This distinguished surgeon is not in favor of excising the rectum, although he has performed about seventy such operations. The only cases which appear to give satisfactory results are in old subjects where the local conditions are most favorable; these patients stand the operation well.

The illustrations of this work are somewhat lurid and scarcely up to modern requirements. There is no necessity for the use of colored plates in a work of this kind. If these are employed, they should be illustrative of the text or should aid the student in making a diagnosis of the pathological conditions which they represent.

ATLAS OF TRAUMATIC FRACTURES AND LUXATIONS, WITH A BRIEF TREATISE. By H. Helferich, M.D. With 166 illustrations after original drawings by Dr. Joseph Trumpp.
New York: William Wood & Co., 1896.

This book is one full worthy of careful detailed study. A hurried inspection of its pages would lead the surgeon to the inference that the illustrations were not carefully finished and were often of no distinct teaching value. This impression may perhaps be due to the style in which the original sketches were made. Closer inspection of these pictures shows that they are truly admirable.

Without exception they teach important surgical truths, and should prove valuable not only to the student but to every man in general practice. The plate-explanations are clear, concise, and as excellent as the pictures themselves. This Atlas can be unreservedly recommended.

Correspondence.

LONDON LETTER.

By St. Clair Thomson, M.D. Lond., M.R.C.P. Lond., F.R.C.S. Eng.

April 20, 1896.

The *cause celèbre* of Kitson *vs.* Playfair has been the one constant and absorbing topic of conversation between physicians during the last month. I see that it is already being fully discussed in your medical papers, but as we have not yet heard the last of it, and as it has given rise to many medico-ethical questions which will take some time to settle, I will briefly review the story of the case. The defendant in this action is well known in the profession; he holds one of the best positions as an accoucheur and gynecologist; by family connections his social status is excellent; his practice is large and lucrative, while the hallmark as to the style of his patients is given by the fact that he attended the Duchess of Edinburgh (now Grand Duchess of Coburg) and that to attend her daughter the Crown Princess of Bulgaria he was called all the way to Bucharest. His book on Midwifery has passed through numerous editions, is known in every English-speaking country, and has been translated into several foreign languages. One day he was asked to see Mrs. Kitson by her family attendant; assisted by the latter he placed the lady under chloroform, dilated the uterus, and extracted some fragments of placenta which justified him in concluding that she had recently miscarried. As she had not seen her husband for thirteen months, the conclusion drawn by Dr. Playfair was obvious. This conclusion would doubtless, in the case of any ordinary client, have remained forever limited to his own and the family attendant's knowledge; but Mrs. Kitson was his wife's sister-in-law, and the Doctor revealed his discovery and his conclusions to his wife and also to her brother, Sir James Kitson. The latter had been in the habit of allowing Mrs. Kitson a pension of $2500 per annum, as she was without other means of support. This sum he promptly stopped. Mrs. Kitson (protected by her husband, who returned from Australia to defend her), having lost through Dr. Playfair both fair fame and fortune, prosecuted him for libel and obtained a verdict with the swinging damages of $50,000. The point as to whether the Doctor had made any mistake did not, unfortunately, directly come into court, although evidence was permitted on the subject. The defendant did not plead justification, and in this many think he was ill-advised. His defense was that the communication to his wife and her brother was privileged and not "libelous" in the sense that the law understands the term, *i.e.* with some private personal and indirect purpose. The jury thought otherwise, and they were strongly encouraged to such a view by the judge, who throughout the trial showed an amount of bias that is happily rare on our Bench. I hear he is a homeopath and a supporter of other fads, including anti-vivisection, although as a "noble sportsman" he is a patron of the turf. An appeal has been lodged, and the case will come on in about a month. It is not expected that the verdict will be reversed or a new trial granted, but it is thought likely the damages will be considerably reduced.

We are now flooded with opinions and correspondence as to the obligations of professional secrecy, and, as there is no written law on the subject, it gives ample scope for consideration. In France the *secret professionel* is clearly defined; the breaking of it is actionable, and no medical man is called upon to reveal it even in a court of law. With us the unwritten law of the profession has always held that the secrets of the consulting-room are inviolable and not to be revealed unless imperatively required. That this law has been respected in a way that does the highest honor to our profession is, I think, shown by the fact that it has required such a case as that of Kitson *vs.* Playfair to call attention to it. But the uncomfortable elasticity of the phrase "unless imperatively required" leaves it to every doctor to decide for himself when the revelation of a secret may be required for the greatest good of the greatest number, and also exposes him to be commended by one judge for his reserve if he refuses to reveal a secret, while another legal luminary may commit him for contempt of court for a similar course! The different readings which may be given to the phrase is shown by an incident during the trial. Sir John Williams, the accoucheur, who was called

on the side of the defendant, stated as his opinion that if a medical man was called to attend a woman and found that a criminal abortion had been induced, it was his duty to inform the police. Justice Hawkins said he had no duty of the sort, and added that if medical men in general held such views the public should be very careful as to what medical man they employed. This appears to me to indirectly give encouragement to the abortion-monger. Any woman "in trouble" who has read this legal precedent has only to go to some quack or irregular practitioner to get a uterine sound passed; she can then send for a skilled physician to clear out safely the fetus which has been destroyed *in utero;* if the physician refuses to help her, the world will condemn him as inhuman, and if he divulges her crime (for the law so regards it) he lays himself open to prosecution for malicious libel.

This is no rare case, and others that occur in daily practice are constantly being reported for an opinion on them in the medical press. A doctor attends a signal-man on the railway and finds that he suffers from double aortic disease from which he may drop down dead at any moment in his signal box and so allow cars full of travelers to rush to their destruction. If the condition is reported to the directors of the railway, the physician may find himself prosecuted by the signal-man for the loss of his employment! And if, as may quite possibly happen, the man shows up in court apparently sound and well some time after the *fiat* of the physician, the latter would cut a sorry figure. Again, a doctor writes to say that he is attending a man with discharging syphilitic sores on his arms, who is engaged in distributing milk daily. Is he to break the "*secret professionel*" to prevent the possibility of numbers of people being infected with the most horrible of diseases, or will he be well advised to let things alone and not risk an action for libel and damages? Had the milk-man been suffering from scarlet fever, the physician would certainly be prosecuted by law for not reporting the case to the authorities; but should he report him as suffering from this other contagious disease, he may find himself mulcted in damages for his efforts to protect the public!

Such are samples of the questions which this case has raised; they have to a great extent overshadowed the original trial. With regard to it, however, people feel that before giving an opinion as to Dr. Playfair's line of conduct, one would have to take into consideration the relationship of the parties concerned and possibly know a great deal more than appears on the surface. It is not likely that a man of Dr. Playfair's experience, knowledge of the world, and *savoir-faire* would have taken the action he did if he had not felt convinced that it was both right and expedient. I think that no one for a moment suspects him of any ulterior motive or of any malice. His adverse critics only charge him with arrogating to himself the rôle of a moral policeman.

With the late Sir William Savory there probably died the last of a certain style of hospital surgeon. What this style was may be gathered partially from the following extract of an obituary notice which has just been written by one of his colleagues and former pupils:

> His eye was pale blue, inclining to be gray. Its general expression was that of calm intelligence, but it was singularly expressive, and its range of expression was remarkable. It is a truism to say that the eye often discloses the whole man, and that the more remarkable the man, the more telling is the eye. Savory's eye was clear, steady, and alert; it seemed to give a pledge more binding than any words; it could be eloquent in thanks; it could convey generous approval. These were its quiet moments. But in an instant it became all aglow, and expressive, as the occasion ruled, of keen attention, intense amusement, or blank incredulity; or it would cloud over and darken, and launch a sudden ultimatum. Steele, in the *Spectator*, tells us that he has seen an eyebrow call a man a scoundrel. Savory's eye, at all events till years brought larger tolerance and restraint, not only pronounced sentence, but it passed on to slay the enemy where he stood.

All cases of infectious diseases in London —except those occurring in private houses where proper isolation can be insured—are transferred to various hospitals for infectious diseases, these hospitals being all under the control of a body called the Metropolitan Asylums Board. This body gave permission for the anti-diphtheritic serum to be fully tested in the wards of its hospitals during the year 1895. The report, which has been looked forward to with great interest, has just been published: it shows that the total number of cases treated with antitoxin was 2182, of which 615 died, representing a mortality of 28.1 per cent. The treatment was principally used only in severe cases, while cases judged too severe to try it went to swell the mortality under the heading "Without the Serum." The mortality in the whole number of cases of diphtheria was 22.5 per cent., as against 29.6 per cent. in 1894. The framers of the report are of opinion that "in antitoxic serum we possess a remedy of distinctly greater value in the treatment of

diphtheria than any other with which we are acquainted." The report attributes to the use of the serum a great reduction of the mortality of cases brought under treatment on the first or second day of illness, and the lowering of the combined general mortality to a point below that of any former year. The medical superintendents of the hospitals express the opinion that the statistics and the clinical observations set forth in the report sufficiently demonstrate the value of the new treatment. The publication of this report has not raised the chorus of jubilation that has accompanied the statements of results on the Continent. Of course, for some years past the death-rate from diphtheria in this country has been diminishing, and having reached a much lower percentage than that of foreign statistics the serum treatment could not in any case be expected to show as marked a reduction of mortality. But for other reasons the report is unsatisfactory; the statistical tables, although elaborate and carefully prepared, are deficient in several details; the report conveys the idea that the medical superintendents had "held a brief" for antitoxin and were endeavoring to make the best of the case for it, while minimizing its drawbacks; and, according to some critics, groups of figures which would have greatly facilitated a judicial opinion on its properties are not embodied in the report. It will be a great pity if these are not forthcoming, as such an opportunity of measuring its effects by statistics will not be likely to present itself again in this country. In the meantime I would advise all interested in the subject to study the figures for themselves, or else to await a more unbiased analysis of them.

The question will probably be opened up again in Germany in consequence of the attention attracted by the death of Professor Langerhaus's son from a protective injection of the serum, and the sensational death-notice making mention of his child as "poisoned by the Behring antitoxin serum." I would only remark that I have never heard of the serum being used in this country for protection; we trust to early diagnosis and prompt treatment.

The month of May will see celebrated Jenner's centenary. It is a curious comment on the anniversary that it should coincide with the havoc wrought by the neglect of vaccination in a town in Jenner's own west country. In the city of Gloucester these curious cranks, the anti-vaccinators, have been so active in their propaganda that they succeeded in getting the compulsory clauses of the Vaccination Acts suspended in 1886. Retribution has been certain and progressive. The cases of smallpox steadily rose, and with them the death-rate, until this spring, when both were sufficiently striking to get noticed on the posters of the evening papers, and on the 24th of March the authorities returned to their senses and reinstated the Vaccination Act after its ten years of abrogation. It is sad to read of the number of children who have suffered and who are scarred or blind for life through their parents' infatuation for the craze of some faddists. Still, they will possibly only abandon this to adopt some fresh fad; and I see that an institution has been started for the treatment of hydrophobic cases on the Buisson system (otherwise known as Turkish baths) so that English patients need no longer (according to the prospectus) travel to Paris to undergo the Pasteur treatment!

Talking of cranks reminds me that there is one humbug less in the world by the death of "Count" Mattei. He bought his title from the Pope in the easy way in which much of the "nobility" of Italy comes into existence. He has left an enormous fortune obtained from the poor dupes who bought his saccharine pellets endowed, according to his statements, with "blue, red, and green electricity"! It is useless to point out to these believers in *post hoc* being *propter hoc* that chemical analysis shows that all this precious "Count's" remedies are made up of sugar and water, and that no galvanometer can detect the slightest trace of electricity. His followers are only confirmed in their opinion that his wonder-working preparations contain "the secret of nature" and are too delicate to be tested by our gross methods. It is noteworthy that the Mattei remedies were prohibited from sale in his own native Italy—for there every patent remedy must bear on the label a statement of its composition,—while they were permitted to do a roaring trade throughout Great Britain.

We have a new President to the Royal College of Physicians. Dr. Wilks belongs to the fast vanishing class of the "all round," scientific, and philosophical physician. He has never posed before the world, so that his untiring observations and his achievements as an investigator and expounder are not as widely known as the lesser work of many smaller men. It might surprise many to hear that this eminently scientific physician maintains that in the administration of drugs we

should be guided by experience only. A few gleanings which I have made from one of his addresses will show his meaning:

What I do object to is the attempt to treat cases of disease on principle when we possess no principles; we do not know sufficiently the action of drugs to do this, and we know less of the meaning or significance of symptoms which we treat. In these circumstances I maintain it is wiser to follow the empirical method and act on experience only.

It seems to me so obvious that, with an imperfect pathological knowledge and a considerable ignorance of the action of drugs, therapeutics cannot in its largest measure possibly be scientific. The cases where the rationale can be given for the use of any medicine can be numbered on the fingers.

But he continues:

I am anticipating the day when there will be a system of true scientific therapeutics, but until that arrives I think we should rather be guided by our experience in the use of drugs than by any principles of our own concoction. One of the worst practitioners I have ever known was a man who had a reason for the employment of every medicine he prescribed. One example will suffice—viz., maltreatment of a case of whooping-cough by giving nothing but nux vomica, as he understood it was a nervous complaint. At present every man is a free lance, and treats his case according to his fancy. Should it be a case attended by fever, one medical man gives antipyrin to reduce the fever, and another digitalis to reduce the pulse, and so on.

In another observation he points out that—

So far, therefore, from persons who are diseased falling a prey to parasites, the opposite seems nearer the truth—that parasites prefer the young and healthy and avoid the old and diseased.

Dr. Wilks argues in an ingenious way that man ought to live to a hundred.

In man the average duration of age is more variable; sometimes we see an individual worn out and really old between fifty and sixty years, whilst another retains his vigor thirty years longer. Inheritance no doubt has much to do with longevity, and we cannot trace out the beneficial or hurtful conditions which tend to influence the duration of life; but there seems to be no *a priori* reason why it should not be prolonged considerably above that of the present period. It may be remembered that Buffon and Flourens, considering the different stages of growth in animals, came to the conclusion that the duration of life was five times that of youth. The latter is the period preceding the time of full development, which is marked by the occurrence of the complete osseous union of the epiphyses with the long bones. I remember seeing the skeleton of Jumbo, the great elephant in Barnum's exhibition, and observed that the epiphyses had not yet united to the shafts. He was said at the time of his death to have reached twenty-three years of age. If this were true he would not have completed his life at one hundred and fifteen. In man this union is said to take place in his twenty-first year, and therefore the correct age of man would be a hundred.

With regard to the future he holds that "one great method of advance in medicine is the getting rid of old theories, fancies, and superstitions, in the same way as has been said by a great writer that in legislation more good has been done during the last century by abrogating bad laws than by the enactment of new ones;" and that—

In spite of the discovery of microbes, showing how many of our diseases are due to the accidental introduction of some poisonous germ, I still think the great work of the practitioner, as well as that of the pathologist, is to endeavor to trace out the various deleterious conditions surrounding us which tend to our impoverishment and degeneration.

As the faciàl palsy left by the application of the forceps is sometimes permanent, it is well to note that a case of cure is recorded in which the constant current was used four weeks after the receipt of the injury; a marked improvement followed the first two applications, and in eight days the side of the face showed complete return of power.

In the search for new anesthetics, the properties of pental have been studied, and the President of the Society of Anesthetists is reported to have said that he was delighted to see members of the Society pursuing their investigations into various drugs likely to become good anesthetics. It required a letter from a well known practitioner in the country to enter a protest against the use of so dangerous a substance as pental, for—by referring to the debate where the above presidential remark was made—he pointed out it is responsible for the appalling mortality of one person out of every 164 to whom it was administered to save a minute's pain.

The Roentgen rays continue to give promise of further possibilities. A demonstration was given at the last meeting of the Laryngological Society to show that both foreign bodies and the movements of a probe could be followed in the upper air passages. It was suggested that when the method was perfected it would be feasible for an operator to introduce a pair of forceps into the throat and then follow and guide their movements by direct observation through the side of the neck.

An inquest has been held lately on a man who had been in the habit of taking bromide of potassium in doses of from two to three drachms for neuralgia. The drug does not appear to have caused the usual symptoms of bromism, but may have caused the palpitation of the heart from which the deceased frequently suffered. Death was attributed to failure of the heart's action from taking the bromide. This case shows the importance of keeping a lookout for depressing symptoms when this drug is being administered, and also the risk the public run when they indulge in the various remedies for "fits" without medical supervision.

The register of students who commenced the study of medicine during the year 1895 has just been published, and shows that no less than 1838 persons in that one year began the five years' course. These figures show an increase on the previous three years, so that we are likely to hear more of the overcrowding in the profession.

PARIS LETTER.

By Arthur Robert Turner, M.D. (Paris).

Dr. Guinard, of the Academy of Medicine, has for the last three months been experimenting with carburet of lime in inoperable cases of cancer of the vagina and cervix uteri. Taking a piece of carburet of lime of about the size of a small nut, he introduces it into the vagina, and places it in immediate contact with the diseased parts. At once the formation of acetylene gas is begun, this preparation possessing the property of being transformed by contact with water into oxide of calcium and acetylene. The vagina is rapidly filled with iodoform gauze, and four days later the latter is removed. For three to four hours after the introduction of the carburet of lime a burning sensation is experienced by the patient, but this rapidly disappears. When the vagina is opened by removal of the gauze, an antiseptic injection is given, and the fragments of oxide of calcium removed.

Dr. Guinard's experience has been that three symptoms of cancer are relieved by this treatment, namely: hemorrhage, fetid discharges, and pain. A smooth surface of grayish aspect is left after the application.

The treatment has this advantage—that it may be undertaken by any physician, requiring neither assistants nor special instruction.

Dr. Variot, physician of the Trousseau Hospital for Children, recently gave an account of a curiously located case of diphtheria occurring in a little girl thirteen months old. The child was brought to the hospital on the 30th of January. Examination revealed the existence of extrophy of the bladder and prolapsus of the rectum. The extrophy of the bladder manifested itself as a livid red tumor, of fungoid appearance, and about as large as a hen's egg, placed below the umbilicus and extending down as far as the perineum. The pubic bones were separated from one another by about two fingers' width. Intense erythema existed around the anus. Bacteriological examination gave a very rich and pure culture of Loeffler's bacilli. Serum treatment was applied, and on the 13th of February the child was sent home. On the 25th of the same month she was once more brought to the hospital, suffering this time from membranes extending over the peri-anal region, from the coccyx forward to the tumor formed by the extrophy of the bladder. No diphtheritic membranes existed as yet on either the bladder or the rectum, but on the 14th of March diphtheritic membranes manifested themselves on the exposed wall of the bladder and of the rectum. Bacteriological examination revealed the presence of staphylococci and of Loeffler's short bacilli. The child then gradually improved. This case is curious on two accounts—firstly, by the localization of the diphtheritic membrane on the extrophied bladder; and secondly, by the rapidity with which a second attack of diphtheria would seem to have occurred in a case treated by the antitoxic serum. It is well, however, to note that the second attack was but an attenuated form, mixed with staphylococci.

Ever since the Madagascar Expedition, considerable attention has been given to the preventive use of quinine salts in malarial countries, and its advantages. Recently the question was brought up before the Academy of Medicine, where a discussion ensued in which Messrs. Vallin, L. Colin and Re Roy de Méricourt took part, the first two being in favor of such a use, the last speaker being opposed to it. Laveran at the next session presented a report to the Academy, in which he came to the conclusion that the drug must be given in doses of at least thirty centigrammes, and that in some cases this must be increased to fifty or seventy-five centigrammes twice a week.

During the Expedition quinine was given to the men for the first four days of the week at the dose of ten to twenty centigrammes daily; but notwithstanding this measure the troops were much affected by disease—so much so, indeed, that one regiment was almost entirely destroyed.

Several plans have been proposed by the French lay press by which land in the island of Madagascar might be distributed to French settlers, and to read some of these plans one could see it was thought by the originators of the scheme that the settler would have nothing to do but to cultivate the soil with his own hands. The conclusion to which Laveran comes is that only by strict hygiene will it be possible for the European to live at

all in Madagascar, and that personal labor is out of the question.

It may be interesting to those who are engaged in researches on tuberculosis to know that a prize of 800,000 francs, or $160,000, has just been founded. This prize, which comes from the estate of the late Mrs. Audiffred, is in the gift of the Academy of Medicine of this city. It is to be bestowed upon whoever, without distinction of nationality or profession, shall within the period of twenty-five years from the 28th of January, 1896, have discovered a remedy, either curative or preventive, which shall be recognized by the Academy of Medicine as efficacious and sovereign against tuberculosis.

Until recently no special qualifications were required of surgeons embarking in the French merchant marine, beyond the possession of a French diploma. Recently, however, a law has been passed that only those physicians who have passed a certain examination comprising a knowledge of sanitary legislation, of bacteriology and of practical sanitation will be allowed to obtain such appointments; nor will any foreigners be allowed to serve in such capacity. Some protests have been made against such legislation, as no allowance was made for those who are now in service, and it is thought that many men who have for years been serving in the merchant marine will by this law lose their positions, as it will be practically impossible for them to obtain an opportunity to study bacteriology.

I have already said a few words concerning the programme of the studies which a medical student in France is obliged to undertake during his first year. I will now say a few words regarding the second year.

In the first place the student no longer attends at the Faculty of Sciences; his work is now done at the Faculty of Medicine. It is very simple: during the winter semester he dissects every afternoon from 1 to 3, and from 3 to 4 attends a lecture either on the nervous system, the digestive system, or the genito-urinary system, according to the day of the week. This year he is not looked after with so much care as previously, for he is not interrogated as during his first year; in fact, he is left very much to his own discretion whether to work or not, as in reality his presence is all that is required at the various exercises. Still, certain notes on work are supposed to be taken, but they are not known to the student, only to the examiners later on.

Besides the anatomy, the student may attend twelve sessions in practical physiological chemistry, where he is given to analyze such substances as wine, dextrin, or glycogen; and four sessions in physics, with practical exercises. These are not obligatory.

During the summer semester the student must attend thirty sessions in practical histology and four lectures on elementary physiology.

It may be seen that during his second year the student is not obliged to pay any attention to hospital work. However, most of them do attend some hospital, as *Benevoles* —usually, as is natural, showing more interest in surgery than in medicine.

During or at the end of his second year the student has no examinations to pass, so that he is sometimes apt to neglect his work, knowing that he has plenty of time before him.

ANTIPHTHISIN.

To the Editor of the THERAPEUTIC GAZETTE:

SIR:—I have just returned from New Orleans, having been present when the commission presented its report. You can judge of the character of the commission from the names of the physicians composing it; and the result is entirely as I had expected.

The medical cases, in which I was more particularly interested, comprise twelve patients (two cases were thrown out, as treated too short a time—only about a week). Of these twelve cases, none were in an incipient or early stage, such as are included in my report under Class A. [See page 309.] The results show: Apparently recovered, 3; greatly improved, 5; improved, 3; grown worse (died since), 1; total, 12. The patients, with two exceptions, all gained in weight. None had previously shown any gain; most of them had been losing. The amount gained varied from 1½ to 30 lbs. All lost their night sweats, temperature became less, cough and expectoration improved, and bacilli diminished and showed degeneration forms. All the patients feel and are sensible of their improvement. I enclose you copy of the conclusions as reported by the commission. The report is condensed as follows:

In November, 1895, the Parish Medical Society of New Orleans, La., appointed a commission for the investigation and a public test of antiphthisin, as to its value in tuberculosis, to be made in the Charity Hospital of New Orleans; the commission consisting of the following members: Dr. Edmond Souchon, President; Dr. A.

J. Bloch, Secretary; Dr. J. D. Bloom, House Physician of Charity Hospital, Prof. John B. Elliott, Prof. R. Matson, Prof. F. W. Parham, Dr. F. Loeber, Dr. Charles Chassaignac, Dr. John H. Bemis, Dr. Joseph Holt, Dr. H. L. Lewis, Dr. P. E. Archinard, Dr. O. L. Pothier, Dr. A. McShane, Dr. C. J. Langfried.

The treatment of cases began November 27, 1895, and the final report was presented to the Parish Medical Society at its regular meeting, March 28, 1896. The report is voluminous and will be published in full.

The following are the conclusions arrived at:

CONCLUSIONS IN SURGICAL CASES.

A consideration of the three improved cases would certainly lead us to believe that antiphthisin has decided value, and we should commend its careful tentative employment in such cases, in conjunction with general measures and the usual appropriate surgical operative treatment. The glandular case we consider especially encouraging. This case would seem to have required a most serious operation for the removal of the gland, with great uncertainty of ultimate benefit. The improvement under antiphthisin treatment would alone justify us in asserting that we have in this remedy a most valuable aid in the management of such cases. We beg to call attention in this connection to the case of Dr. Ambler, of Ohio, reported recently in the New York *Medical Record*, as confirmatory evidence of the value of antiphthisin in glandular tuberculosis. The hypodermic employment of the remedy would seem to be especially advantageous, if administered under careful aseptic precautions.

CONCLUSIONS IN MEDICAL CASES.

1. In nearly every case the area of lung involved decreased, if it did not clear up entirely.
2. Auscultation bore out the results of percussion, vesicular respiration replacing in a greater or less degree morbid breath-sounds; in those cases which were classed as cured, the departure from health is only such as is due to the results of every continued pneumonic process.
3. Secretion was diminished even in the cases marked only "improved," and entirely absent in others.
4. Bacteriological reports in most of the cases bore out the results obtained in physical and other examinations.
5. The general condition of the patients improved in the large majority of cases, even when physical examination did not show any great improvement.
6. The use of the remedy was not attended with any danger to the patient.
7. Finally, antiphthisin does seem to have *curative*, and not simply palliative, qualities.

Very truly yours,

KARL VON RUCK.

CHLOROFORM AND CAMPHOR AS AN ANESTHETIC.

To the Editor of the THERAPEUTIC GAZETTE:

SIR:—For some four years I have tried a new combination as an anesthetic and am much pleased with it. My experience has been too limited, only having administered it in thirteen cases, to base any conclusions on; but theoretically and practically, so far as I have tried it, it would seem to be an improvement on what we are using at present. My combination is nothing more than to substitute the spirit of camphor for the alcohol in the well known A., C. and E. mixture.

The stimulating effects of camphor on the cardiac centres are well known; besides, the addition of camphor makes the anesthetic very much more agreeable to the patient, covering as it does the disagreeable and pungent odor of the ether.

I hope it may be tried in some of the hospitals and its merits tested.

F. GUNDRUM.

SACRAMENTO, CAL.

"HONOR TO WHOM HONOR," ETC.

To the Editor of the THERAPEUTIC GAZETTE:

SIR:—In my article on "The After-treatment of Cataract" in your February issue I should have stated that the "baseball" mask, pictured in Fig. 4 and suggested by Würdemann, is a modification of the original wire-woven protector introduced by Dr. George E. Frothingham, of Detroit, in a paper read before the Ophthalmological Section of the American Medical Association in 1891.

Yours truly,

CASEY A. WOOD.

CHICAGO, ILL.

Notes and Queries.

IMMUNIZATION AGAINST SERPENTS' VENOM.

On the 20th inst., Prof. T. R. Fraser delivered a lecture at the Royal Institution of London, on "Immunization against Serpents' Venom, and the Treatment of Snake-bite with Antivenene." The audience, which was a large and distinguished one, included Lord Rayleigh, Professor Dewar, F.R.S., Dr. Franklin, Dr. Farquharson, Dr. Lauder Brunton, Dr. Murrell, Dr. C. D. F. Phillips, Sir J. Crichton Browne, Dr. Beevor, Sir William Priestley, and Dr. Playfair. The lecturer gave an interesting account of his recent experiments, demonstrating that animals can be rendered immune against the poison of venemous serpents by the administration of small and frequently repeated doses of the venom. This is probably the greatest advance which has been made in this interesting investigation, and affords a ready explanation of the impunity with which snake-charmers handle cobras and other poisonous snakes in India and other countries where these animals abound. Dr. Fraser showed an interesting collection of dried venoms, one of which, weighing about twenty grammes, was stated to be sufficiently toxic to prove fatal to over six thousand human beings.—*Medical Press and Circular*, March 25, 1896.

—THE—

Therapeutic Gazette.

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Original Communications.

*A CASE OF STAMMERING DUE TO ADENOID VEGETATIONS, AND THE RESULT OF TREATMENT.**

BY G. HUDSON MCKUEN, M.D.

More than fifty years ago operations were performed, with varying success, for the cure of stammering. Among the principal ones were excision of the tonsils and of portions of the tongue, amputation of the uvula, and division of some of the fibres of the hyoglossus and geniohyoglossus muscles. These operations met with opposition on every hand, and justly so, because many of them were done empirically rather than for the correction of definite anatomical defects. To amputate the uvula or excise the tongue in every case of stammering would be, to say the least, very bad surgery.

The child that I shall show this evening was referred to me for examination less than two months ago. The attending physician told me that his speech had always been defective and that it was growing worse; lately he had hardly been able to speak at all, especially before strangers; he had a peculiar catch in his voice. He was nervous and timid, and poorly nourished, having always suffered from indigestion. To what extent

* Read before the Philadelphia County Medical Society, January 22, 1896.

his stammering was the cause of these symptoms, it is difficult to say, but I believe it was one of the chief factors. Any peculiarity of speech makes an immense impression on a child: his parents always make him feel that it is a great calamity, and his playmates poke fun at him; and few children can endure this sort of thing without experiencing great mental depression, with all its attendant physical derangements.

The problem presenting itself, then, in every case of speech-defect, is: What is the cause, and what is the effect? In other words, does the stammering, for instance, cause the indigestion, or does the indigestion cause the stammering? We can make no hard-and-fast rule in this matter, but every case must be a study in itself. Take, for example, the one which I presented a year ago — a young man, nineteen years of age, who had never been able to use intelligible speech, and whose general manner was almost idiotic and his health very precarious. It is now a little more than two years since I divided the anterior fibres of the geniohyoglossus muscle and thus loosened up his tongue and made speech possible. I then taught him to speak, and in less than a year after the operation he articuluted in your presence "Brutus' Speech against Cæsar" with almost perfect accuracy. And now, a little more than a year later, he is in George School preparing for college, and I am told by the principal that he is one of the brightest boys in the school and his general health is excellent. The first cause in his case was an organic one, viz., a short geniohyoglossus muscle, and this organic and congenital defect was just enough to prevent the development of the speech-faculty; and the non-development of this faculty became in its turn the cause of his stupidity and lack of physical tone.

Stammering, or any other defect of speech, should be looked upon as a disease, or the symptom of a disease, and treated accordingly by the skilled physician; and not, as is so often the case, relegated to some charlatan who claims to have made a wonderful discovery which he retails for so much hard cash, at the same time binding the unfortunate patient to profound secrecy. Any trick for the cure of stammering, applied to all cases, must be a failure, because there are no two cases alike, and no single expedient or combination of expedients is applicable to all. The only rational method, of course, is to study each case separately and if possible make an accurate diagnosis, as we do in any other disease.

Upon examination of the case before you, I found, in addition to what I have already mentioned, defective tongue-action, an elongated uvula, and what appeared to be a slight adenoid thickening, although my view of the vault of the pharynx with the rhinoscopic mirror was very limited. I observed also that the boy had defective vision. I asked him his name, but he could not tell me to save his life, though he made frantic efforts to do so. The difficulty seemed to be at the base of the tongue, and even when no attempt was made at speech there were peculiar twitchings of the lingual and facial muscles.

After a careful study of the case at frequent intervals for two weeks I made a diagnosis of chorea of the facial, lingual, pharyngeal, and laryngeal muscles, due chiefly to adenoid hypertrophies and in part to some deviation from the normal in the geniohyoglossus muscle and to defective vision. I explained the matter to the parents, and after a consultation with the family physician, and with his assistance, I put the child under ether and divided the frenum of the tongue well back, and then with my own modification of the Gottstein curette I removed a mass of tonsillar tissue from the vault of the pharynx fully as large as a black walnut. I was surprised at the size of this tonsil, for aside from the chorea which I have mentioned the boy had few of the symptoms of adenoid vegetations.

The child made a rapid recovery from the operation, and came to my office on the second day thereafter. Frequent lingual traction was made to keep the cut edges of the frenum from uniting, and the tongue has now a full half-inch increase of protrusion, and the protrusion is almost straight, whereas before the operation it was a half-inch to the right of the median line.

Had the child not improved so much in speech, I should have considered the advisability of dividing a few fibres of the geniohyoglossus muscle on the right side in order to correct this irregularity, but the improvement has been so rapid that I have thought further operative interference unnecessary. He has not had a single "catch" in his voice since the operation. The after-treatment, besides the application of glasses to improve his vision, has been along the line of elocutionary drill directed toward the correction of several little faults of speech which were more or less closely related to the main trou-

ble. For instance, he has had a tendency to talk more rapidly than is compatible with good speech, and as a result there has been a frequent repetition of certain syllables. This constitutes a kind of stutter which is very different from the more serious spasmodic muscular contraction that characterized his former attempts at speech, and which is not yet entirely eradicated, although at times it is scarcely noticeable.

Before introducing the boy I shall briefly review the case. His speech had never been good, and for some time past it had been growing progressively worse until it threatened to wreck his future usefulness. Not only were the muscles controlling his vocal and oral expression affected, but those controlling his facial expression as well, as was shown by various kinds of contortions and grimaces. I treated him as above stated, and ten days after the operation Dr. de Schweinitz examined his eyes and sent me the following report:

Refractive error: hypermetropia, with congenital amblyopia of the right eye, vision amounting, under the best correction, to not more than two-thirds of normal, while in the left eye the vision is entirely normal. Both optic discs slightly congested, with undue prominence of the central lymph-sheaths, and many lymph-reflexes throughout the retina. Insufficiency of one degree of the external recti. Much wrinkling of the occipito-frontalis, and occasional headache.

The refractive error was corrected, and it was advised that the glasses should be worn constantly, and that the functions of the right eye should be developed by separate exercises.

These instructions have been carefully followed, and a week ago I removed the tip of the uvula, which was too long and which acted as an irritant to the throat, and as a result his voice is somewhat clearer. The boy has evinced rather more than the average intelligence and will-power, and his mother has assisted him greatly in carrying out my directions. As I have said, two months ago he could not tell me his name, and I shall now show you not only that he can talk but that his speech is better than that of the average boy of his age.

SOME OF THE USES OF RESORCIN IN DERMATOLOGY.

By M. B. Hartzell, M. D.,
Instructor in Dermatology, University of Pennsylvania.

Although resorcin has been employed more or less in the treatment of cutaneous diseases ever since its introduction as a medicinal agent, some fifteen or twenty years ago, it occupies but a secondary place in dermatological therapeutics. A large experience with it, however, in the treatment of diseases of the skin, has convinced me that it is deserving of more frequent employment, and I have thought it worth while to call attention to it anew as being a very useful remedy in a considerable number of troublesome affections. It possesses keratoplastic and decided sedative properties, the latter making it a valuable application in that large class of diseases in which itching and burning are prominent and often extremely annoying symptoms.

Although it is commonly supposed to be too irritating to be of use in eczema, yet in many of the milder forms it often proves extremely serviceable in allaying the pruritus and diminishing hyperemia; and in the oozing forms, when the inflammation is not too acute, it often acts most happily in diminishing discharge and favoring the speedy formation of cornified epithelium. Many cases of erythematous eczema will recover under the judicious use of this remedy alone. According to my experience it does best when used in watery solutions, of the strength of ten to fifteen grains to the ounce, it being rarely advisable to use stronger solutions than the latter; ointments are far more apt to irritate, and for that reason do not prove as useful as lotions. The addition of one-half per cent. of sodium chloride has seemed to me to increase the sedative effect of aqueous solutions, possibly by favoring the absorption of the drug by the skin. That it may be absorbed in considerable quantities was shown in cases under my observation—in which the lotion was applied to large areas of skin—by a marked greenish discoloration of the urine; and this was never noticed except when the lotion contained small quantities of salt.

In the treatment of erythematous eczema the following lotion will be found to be of much service, being cleanly and agreeable to use:

℞ Resorcin, gr. x–xv;
Glycerin, ♏ x;
Liq. calcis, f℥ j. M.

This should be lightly dabbed, not rubbed, upon the affected parts for five minutes at a time, three or four times a day; used in this manner it usually stops itching and burning and lessens the inflammation. The small quantity of glycerin added is necessary to prevent the unpleasant drying which is apt to follow the use of all watery lotions. In

moist oozing eczemas the addition of some insoluble powder — such as oxide of zinc, calamine, subnitrate of bismuth — enhances its usefulness. In cases in which oozing is very abundant, subgallate of bismuth has seemed to be decidedly valuable when combined with the resorcin, as in the following:

℞ Resorcin, gr. x–xv;
Bismuthi subgallat., ʒ ss;
Glycerin, ♏ x;
Liq. calcis, f℥ j. M.

Under the use of this lotion the moisture becomes less, the itching and burning subside, and desquamation shortly sets in. When the skin becomes dry and scaling, a paste of resorcin, like the subjoined, may be substituted for the lotion:

℞ Resorcin, gr. xv;
Pulv. amyli,
Pulv. zinci oxid., of each, ʒ ij;
Petrolat., ℥ ss. M.

This may be applied twice or three times a day. Owing to the fact that this paste turns blue some little time after it is applied to the skin, it is not suitable for use upon uncovered parts.

Notwithstanding its stimulating properties when used in sufficient strength, I have not found resorcin of much service in old, thickened, squamous eczemas.

I have elsewhere called attention to the remarkable sedative effects exhibited by this drug in the treatment of painful ulcers of the leg which so frequently complicate varicose veins and eczema of the lower extremities. I know of no other remedy which is so useful in relieving the pain of these lesions, which is often excruciating. Used in an ointment of the strength of five to twenty grains to the ounce, applied two or three times a day, it rarely fails to afford decided relief. Although it gives most gratifying results in the relief of the pain, it is less useful in promoting healing, being distinctly less valuable than many other remedies.

Resorcin is also of some value in the treatment of psoriasis, but it must be employed much stronger than is permissible in any of the forms of eczema. An ointment containing thirty to forty grains to the ounce may be usefully employed upon uncovered parts where tar or chrysarobin are objectionable on account of the staining which they cause. Where the inflammatory symptoms are at all acute, ointments like the above must be used with some degree of caution, however, since they are capable of producing an undesirable amount of reaction.

In seborrhea, particularly of the scalp, resorcin is one of our most useful remedies; being odorless and practically colorless, it makes an agreeable application to the scalp —much more so than sulphur, which is so frequently prescribed. In the treatment of seborrhœa capitis, the following oil will be found to be an agreeable and efficient application:

℞ Resorcin, gr. xx;
Alcohol, f℥ ij;
Petrolat., fl., f℥ vj. M.

A small quantity of this should be thoroughly rubbed into the scalp with the fingers or a small sponge every night at first, later every second night. It should not be prescribed, however, for those with very light hair, since it causes a slight but noticeable discoloration.

In acne an ointment of resorcin—twenty or thirty grains to the ounce—may be sometimes used with good effect, but it is distinctly inferior to the preparations of sulphur; and I have not found it a trustworthy remedy, since it sometimes unexpectedly sets up quite a severe dermatitis when used upon the face.

In another and most important cutaneous affection — epithelioma — resorcin sometimes acts in a remarkable way in promoting cicatrization. A mild and painless caustic, its destructive effects upon sound skin are quite superficial, but it acts with considerable energy upon epitheliomatous tissue. It is most useful in those flat, superficial, slowly spreading lesions seen so often upon the face, particularly upon the forehead. These will frequently heal up in the most surprising way under the prolonged use of a plaster like the following:

℞ Resorcin, gr. lxxii;
Ceræ flav.,
Pulv. resinæ, of each, ʒ iss;
Ol. olivæ, q. s. M.

This plaster may also be used with good results after the employment of more active caustics, such as pyrogallol, when the slough has separated, healing occurring rapidly under it.

In addition to its sedative and keratoplastic properties, resorcin possesses considerable value as a parasiticide. Ihle has found the following paste efficacious in the treatment of favus:

℞ Resorcin, ʒ i–iss;
Lanolin,
Vaselin,
Pulv. zinci oxid.,
Pulv. amyli, of each, ʒ ij. M.

And an ointment containing thirty to forty grains to the ounce is serviceable in the treatment of the various forms of trichophytosis. Although it is not superior to other remedies of this class, it has the advantage of being a cleanly application, far more so than sulphur and tar which are so commonly employed as parasiticides. In tinea versicolor an alcoholic solution, twenty to thirty grains to the ounce, may be painted over the affected area with a large camel-hair brush nightly, until free desquamation takes place. If the disease is not completely cured when desquamation is completed, the applications may be repeated a second or third time.

SOME THERAPEUTIC USES OF GUAIACOL.

By Horace G. McCormick,
Physician to the Williamsport Hospital, Pennsylvania.

I desire to give my experience, gleaned from bedside observation, of that little-written-about drug, Guaiacol.

Its use as a local application for the reduction of temperature was first suggested to me by Dr. J. Solis Cohen, some two years ago, in a case of tuberculosis which he saw in consultation with me. Its action in this case was so prompt and effective that I pushed the investigation in other diseases, with results herewith summarized.

In September, 1894, when I entered upon my term of service in the Williamsport Hospital, I commenced its use as a local application for the reduction of temperature. In typhoid fever, since then, I have had it applied 864 times—778 times in the Hospital, and 86 times in private practice. These applications were made to forty-three different persons, about equally divided between males and females, with wide variation of ages. The greatest number of times it was applied to any single person was 78, and the least number of times once. The largest dose was twenty-five drops, and the smallest two drops. The greatest reduction of temperature was from 106.8° to 101°, in two hours, by the application of five drops, with a corresponding reduction of the pulse-rate from 136 to 110 per minute, the respirations falling from 36 per minute to 28. This patient, however, showed very great susceptibility to the drug, as the application of two drops reduced the temperature from 103° to 100.4° in one and one-half hours. A number of special reports were prepared for me by the nurses, of some of the cases in which guaiacol was applied, which may be useful in showing its effect not only upon the temperature but also upon the pulse:

Carrie Horton:

Five drops of guaiacol applied.	Pulse.	Temp.
9.45 P.M.	144	107°
10.20 P.M.	132	104.2°
10.50 P.M.	132	102.2°
Five drops applied.	**Pulse.**	**Temp.**
12.45 P.M.	130	104°
1.30 P.M.	120	100.6°
Five drops applied.	**Pulse.**	**Temp.**
5 A.M.	118	104°
5.30 A.M.	108	102.4°
Five drops applied.	**Pulse.**	**Temp.**
1.25 P.M.	135	104°
2.20 P.M.	130	101.8°

Ada Saxton:

Twenty drops applied.	Pulse.	Temp.
11 A.M.	126	104°
12.30 P.M.	112	101°
3 P.M.	110	100°
4 P.M.	122	99°

Anna Witzman:

Ten drops applied.	Pulse.	Temp.
10 P.M.	130	104.4°
11 P.M.	108	100.6°
12 midnight	105	98.2°
12.30 A.M., slight chill.		
Fifteen drops applied.	**Pulse.**	**Temp.**
12 M.	126	105.2°
1 P.M.	120	101.4°
2 P.M.	106	100.8°
Fifteen drops applied.	**Pulse.**	**Temp.**
10.40 P.M.	156	107°
11.15 P.M.	134	104°
12 midnight	116	102.4°
12.45 A.M.	108	99.8°

You will notice that within thirty minutes after the application there was a fall in the temperature, and in most cases a corresponding reduction of the number of heart-pulsations per minute. It is generally asserted that guaiacol is a depressant, and, for this reason, a dangerous remedy in diseases where the circulation is likely to suffer from long-continued fever. This assertion has not been borne out by my experience. On the contrary, I have seen at different times, with a high temperature, a pulse so rapid and weak that it could not be accurately counted, after the application of guaiacol distinctly lessened in frequency and strengthened in force. A weak and rapid pulse is to me no contra-indication for the use of the drug.

In the case of Anna Witzman the reduction of temperature is well illustrated: seventy-eight applications were made. You will notice that on November 11, at 10.40 P.M., the temperature reached 107° and the pulse was 156. Fifteen drops of guaiacol was then

applied, and at 12.45 A.M. the temperature was reduced to 99.8° and the pulse was 108. The ice pack was used in this case, it being kept up for twelve consecutive hours, yet I was forced to abandon this and return to the guaiacol in order to reduce the temperature. This case was one of the most persistent cases of high temperature I have ever seen. She made a good recovery.

The effect of guaiacol lasts from three to four hours; the more often it is applied, the greater the effect. When I first commenced the use of this drug I found that the sudden reduction of temperature caused chilling in a number of cases, but after I became more accustomed to its use chills rarely occurred. If it can be avoided, the temperature should not be reduced below 100°; and this is a matter which can easily be regulated after the applications have been made a few times, care being taken to commence with a small dose, say ten to fifteen drops, this gradually being increased if necessary until the temperature is reduced.

It has been suggested that by this rapid reduction of temperature there is great danger of producing congestion of some of the internal organs of the body. I have not seen a single unfavorable symptom (except an occasional chill) following its use. I had one case of pneumonia as a complication, but this did not develop until six days after the last application of guaiacol, which was in no way responsible for it.

The point selected for the application was the right iliac region. This was thoroughly cleansed with soap and water, and after the part was thoroughly dried (it is important that the surface should be entirely free from moisture, for guaiacol being of an oily nature will not be absorbed if there is the least moisture present) the guaiacol was slowly dropped upon the surface and thoroughly rubbed in with the hand for from ten to fifteen minutes. The part was then covered with oiled silk or waxed paper. The only preparation used was Merck's, and it rarely failed to produce the desired result. Any other point would probably do as well for the application, but I selected this because it was as near the seat of the trouble as I could possibly get, and could be easily reached and covered with the oiled silk, without in any way disturbing the patient. In only three cases was any local irritation produced, and I was forced to move to the left side to make my applications.

There were no unpleasant symptoms accompanying its use, and no complaint was made by any of the patients. The disagreeable odor that has been described by some as being objectionable, was referred to by only one of my patients, and then only on the first application. Sweating is nearly always produced, corresponding somewhat to the greater or less reduction of temperature.

One very important fact was observed in the use of this drug for the reduction of temperature in a case of pyemia. The case was seen in consultation with Dr. Detwiler, and was found with a temperature of 107°. Twenty drops of guaiacol produced no effect. The application was repeated in forty minutes, and yet no effect on the temperature was produced. Fifty minutes later another application (this time forty drops) was made, with the same result as before. The applications were continued until the expiration of three hours, when 100 drops had been applied, yet during this time the temperature had not varied over half a degree from 107°. The pulse, which was weak and rapid when the first application was made, at the end of three hours had lessened in the number of beats per minute and increased in volume. There was no sweating in this case. I have not had an opportunity of trying it in any other case of pyemia, but from my experience in this one I am led to believe that it has no value.

It may be urged that the fever of typhoid is not the disease, and does not call for treatment. That it is the disease, no one will pretend to assert; but that it is an important symptom, and when it rises beyond a certain point calls for something to reduce it, or keep it in abeyance, every physician who has had much to do with this disease can bear testimony.

When the system of baths was first introduced, the only object was the reduction of temperature, but those using them found their patients did so well under this form of treatment that they took to philosophizing upon the subject and undertook to prove that the cold bath did something else, not exactly admitting of explanation, by modifying the disease, lessening the fever, and making the case a less formidable one. That this effect is produced I am willing to concede, but that the baths do more I believe is open to serious question, and further proof will be required to place it beyond controversy in the profession.

Much has been written, by the advocates of the system, of the delight and pleasure

their patients have experienced in being put in a cold bath. I believe these gentlemen have never tried it upon themselves. I have no reason to believe that the people of Philadelphia or Baltimore are any less susceptible to cold than those in the interior of the State. I have used the cold bath many times, and, with the exception of a colored boy whom I treated in this way some time ago, I have not been able to make my patients believe by any argument of mine that it was an enjoyable pastime. I thoroughly believe in it as an effective form of treatment, but it is not pleasant for the patient; it is difficult to carry out in detail; it involves great expense, and, in private practice, is not a practical form of treatment. You may invent all the portable bath-tubs you will, and the method still lacks that practicability that is demanded by the general practitioner.

Guaiacol when given internally does not markedly reduce the temperature. I have given as high as ten drops in a single dose to a patient without materially affecting the pyrexia, while the same amount thoroughly applied to the skin would reduce the temperature to a marked degree. I have also applied the remedy to those in health in sufficient doses to reduce an abnormal temperature, without any effect upon either the temperature or the pulse.

The natural question to ask would be: If this drug possesses the power as here asserted, what is its method of action? How does it reduce temperature? What is the physiological action? Now, in order that there may be no controversy, with me at least, upon this subject, I candidly assure you that I do not know. I know the effect, but cannot explain how it is brought about.

While I have a high regard for guaiacol as a local antithermic, none of this respect is lost when I come to use it internally. As an intestinal antiseptic I believe it has no superior. I have used it in fifty-six cases of typhoid fever, with the best results. The best evidence of its virtue in these cases is the fact that tympanites was either entirely abolished or was present in so slight a degree as to be of no consequence. The tongue was moist throughout the disease, and delirium if present was of a very mild form. Of the fifty-six cases thus treated, fifty-five recovered. The one that died was admitted to the hospital on the fourteenth day of his sickness, and died on the nineteenth—of perforation; an autopsy was made, and it was found that the perforation had taken place about three inches above the ileo-cecal valve. When the abdomen was opened, the unmistakable odor of guaiacol was found to be present. This was to me an important discovery, as by the death of this man was proven—what I had before been led to believe—that guaiacol passes through the alimentary canal unchanged, for the guaiacol which had been given this man was still guaiacol at the ileo-cecal valve, and passage through the colon would not be likely to change it. The smell of guaiacol was noticed in the stools of nearly all of these patients. It has been my practice to give the pure guaiacol in emulsion. This is rather a disagreeable dose, and some objected so seriously to its use that I was forced to give it in capsules; when this was not expedient, then I gave the carbonate of guaiacol dry upon the tongue in 2½-grain doses. I have never found this to disagree with the stomach, and patients do not offer any objection to taking it.

In summing up this question I feel convinced of the following facts:

That guaiacol, when locally applied in typhoid fever, is certain to reduce the temperature.

That, with the care that a physician should always use in the administration of drugs, it is absolutely safe.

That chills will not occur if the temperature is not reduced below 100°.

That no deleterious effects are produced upon any organs of the body by its use.

That it is easy to apply and can be used by any one competent to nurse a typhoid-fever patient.

That there are no depressing effects following the use of the drug, if used intelligently.

That by its continued use the dose can be gradually lessened.

That it is far superior to the cold bath, in that it can be used by one person. All the appliances necessary for its use are obtainable in any house. It is much more pleasant to the patient, and carries with it no horror to the family. Argument and persuasion with family and friends are not necessary. It is fully as effective as the cold bath. Patients are not subjected to the danger of moving. There is no complication such as hemorrhage, etc., that is a contra-indication to its use.

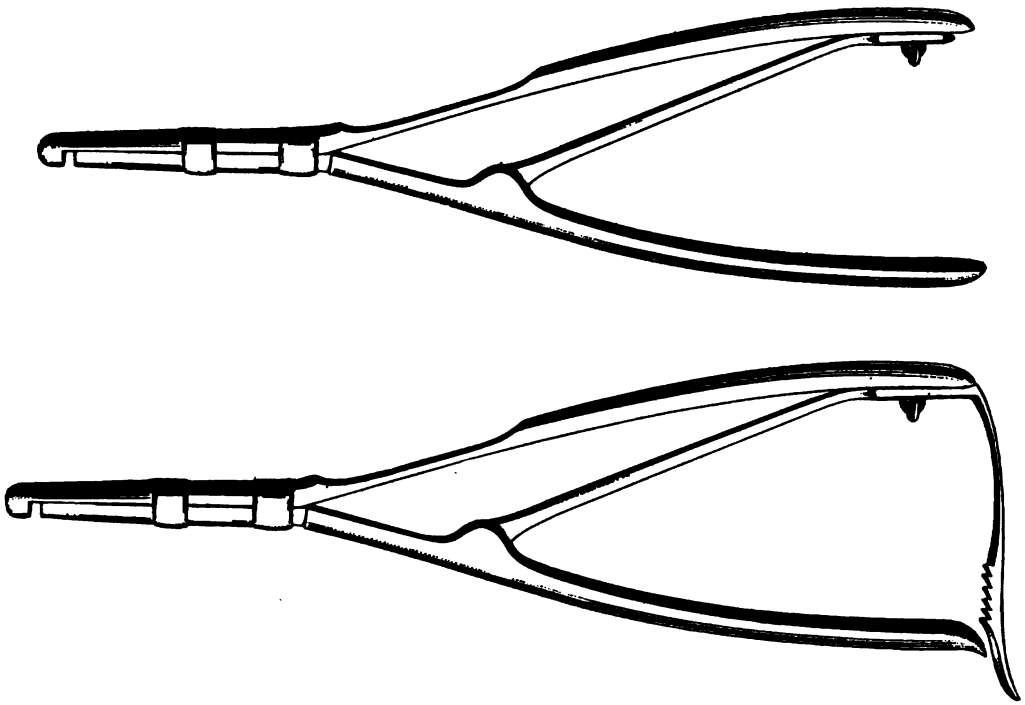
That when given internally it is one of the best, if not the best, intestinal antiseptics known. By its use in typhoid fever the dry tongue and tympanites are abolished, rendering digestion and assimilation more perfect, and reducing the probabilities of hemorrhage to almost *nil*.

A NEW NEEDLE-HOLDER.

By Gwilym G. Davis, M.D., M.R.C.S.,
Philadelphia.

Disliking the ordinary forms of Hagedorn needle-holders on account of their bulky and clumsy jaws, and complicated and hard-to-keep clean mechanism, the following was devised. It can also be used for the ordinary needles.

It consists of an upper and lower blade which slide on one another, joined by a stiff rod or lever.



The upper or female blade has two bands through which the male blade slides. At the junction of the handle with the jaw it is ground sufficiently thin to form a spring which opens the jaws when the pressure is released. At its extremity it has a button, capable of being turned with the fingers, which holds the end of the lever in place.

The male blade is made stiff and unbending throughout. Its anterior end, that which grasps the needle, has a transverse cut across its upper portion as wide as a Hagedorn needle and equal in depth to half its thickness. This prevents the needle from slipping. On the inner surface of the handle is a pivot on which the lever hooks.

The lever is a stiff unyielding rod, on one end of which is a hook, and in the other end a slot to receive the button on the opposite blade. This lever can only be hooked on the pivot when held perpendicular to the blade. To dismount the instrument, the button is turned and the lever allowed to drop. The male blade, with lever attached, is then withdrawn, and the lever lifted at right-angles to the blade and unhooked from the pivot.

If a catch is desired, the lever is continued down across the end of the opposite blade as shown in the illustration. Personally I dislike a catch and do not use it.

The instrument is made by D. W. Kolbe & Sons, 1339 Arch street, Philadelphia, Pa.

*PUERPERAL ECLAMPSIA.**

By H. R. Coston, M.D.,
Fayetteville, Tenn.

Puerperal eclampsia is an acute disease developing during pregnancy, parturition, or the puerperal state, of a convulsive nature, attended with loss of consciousness and coma.

The etiology of eclampsia is by no means perfectly understood. The most popular theory at present attributes it to a toxemia from retained excrementitious matter in the blood which should be thrown off by the kidneys, liver, and other emunctories of the body. The toxicity of the blood is increased, probably due to the deficient action of the kidneys and other emunctories. An hydremic

* Read before Lincoln County Medical Society, March 11, 1896.

condition of the blood has been thought to be a cause, by increasing the tension and irritability of the nervous centres, and that blood-poisoning from imperfect elimination exists. This theory is worthy of careful consideration. By it we can explain the almost constant presence of albumin in the urine, the headache, the amblyopia, nervous excitability, and epigastric pain.

The age of the patient is also an etiological factor of considerable weight, the vast majority of patients being under thirty. Also the number of children borne, at least four-fifths of the cases being in primiparæ. Old primiparæ are thought to be more liable to the disease than those who are younger.

The percentage of eclamptics is much greater in plural than in single pregnancy.

A woman illegitimately pregnant is more subject to the disease than married women, thus introducing a psychological element. Emotional disturbances, either of grief or joy, are conducive to its development.

Inactivity of the liver and kidneys, however, is the agent which is chargeable with more of these cases than any other.

Albumin is almost always present in the urine either before or after the convulsion, and must always be looked upon as indicative of a tendency to eclampsia.

Heredity possibly plays a very insignificant part, if any, in its development.

When you have a pregnant patient who complains of headache, flashes of light before the eyes, dimness of vision, and epigastric pain, you may feel quite sure she is in danger of developing convulsions; and when coupled with the above you find a scanty secretion of urine, and that albuminous, you may be certain convulsions will occur, unless nature is relieved in some manner. But all these premonitory symptoms may not be present in every case: the patient may complain only of the epigastric pain, which is a very constant symptom, or of headache or optical symptoms. Albumin may even be absent from the urine, and the kidneys be doing their full duty; but be not deceived, some organ is disturbed in its action, else there would not be any cause of complaint, for pregnancy is a physiological state. If you fail to find albumin, look for creatin or creatinin in the urine. Inquire of the bowel functions; it may be she is constipated or her food is passing undigested. The liver is possibly torpid. Examine her skin and see if it is not dry and failing to perform its part in ridding the system of effete matter.

An eclamptic convulsion resembles an epileptic convulsion, with the exception that the cry is absent; and the eclamptic is altogether much more horrible to behold than the epileptic: when once seen, it is sure to be recognized if ever seen again. At the beginning of the attack the convulsions are tonic: the eyes are usually set, with a vacant stare, and slowly roll upwards to the left, while the head is turned to the right; the fingers tightly grasp the thumbs across the palms; the forearms and hands are pronated, and the entire body becomes rigid. This tonic spasm lasts from ten to twenty seconds, during which the respiration and circulation seem almost ready to permanently cease, the face is horribly contorted, the mouth drawn to one side, and every facial muscle seems to be adding its quota to make up the most horrible of expressions possible to be seen upon the human countenance. The tonic spasm rapidly passes into clonic spasms: the head is jerked rapidly from side to side; the eyes open and shut with great rapidity; the lips and mouth are rapidly opened and closed with a peculiar smacking sound which is almost a characteristic of this disease; the tongue is protruded and withdrawn with great rapidity, adding to the clucking sound produced by the lips, and is liable to be severely lacerated unless properly protected—indeed, a case is reported in which it was so severely cut as to require ligature of the lingual artery, and another in which it was so torn and bruised that the resulting swelling of the organ caused the death of the patient by suffocation; the arms are jerked back and forth with great force and rapidity; and the spasms are now so general that every muscle in the body seems to be in rapid vibration and the patient may be thrown from the bed thereby. The feces or urine may be involuntarily expelled during the attack. The spasm rarely lasts longer than one minute, but to the onlookers it seems several minutes. The patient passes from the clonic spasm into coma or stupor, and the skin is covered with a cold, clammy perspiration. The cyanosis, which has been deep, passes off, and the respiration and circulation, which have been so greatly disturbed, gradually become normal.

Owing to implication of the respiratory muscles, a long attack would surely produce death. After a single convulsion the sopor usually passes off in from one-half to three hours, though it may last more than twenty-four hours.

There may be but one attack, or there may

be many. Depaul reports one hundred and sixty. The temperature is from 100° to 102° and may go much higher, and it is said to rise still higher after death in many cases. The pulse is from 90 to 120 per minute.

The prognosis for the mother is very grave, the mortality being certainly not less than thirty per cent. In a given case it depends to a great extent on the number and severity of the convulsions and the depth and duration of the coma. If the patient has more than fifteen convulsions she will be almost sure to die. The issue depends to some extent, too, on when the convulsions begin: if before labor, the prognosis is very grave; if during labor, not so bad; and if after labor, there will be the most chances of recovery. Also the amount of albumin in the urine must be taken into account in summing up the prospects. The longer and more difficult the labor, the worse the prognosis for the mother.

In a large percentage of cases the convulsions cease entirely when delivery is accomplished; in a less number they become feeble; while in others they continue for a time in undiminished severity.

At least half the children are born dead; most authorities make the fatality greater than half. The high temperature of the mother and the circulation of impure blood probably cause the death of the child in the majority of cases, but placental hemorrhage is also accountable for death in many cases.

Treatment.—I shall pass over the pathology and turn at once to the treatment. Prophylactic treatment is of vast importance, and it is safe to say that were it carefully carried out, there would not be one-third the deaths to record every year from eclampsia that are recorded under the present régime. The pregnant woman should be under the observation of her physician from the very time she becomes pregnant until the end of the puerperal month. It is not sufficient that the husband come to the physician once or twice a month and tell him that his wife is getting on all right; that her bowels move regularly and her kidneys act well; but the physician should *see* her at least once a month and make a careful examination of the entire body, especially the kidneys and bowels. He should secure at each of these visits a sample of urine for chemical and microscopical examination. He should not be satisfied at finding no albumin or tube-casts, but should test for creatin, creatinin, biliary salts, acetone, and indican. Indicanuria and acetone should direct his attention to the alimentary canal, for decomposition is surely going on there, or there is some obstruction to the proper performance of function of the bowels, or the urinary revelations may be a warning that the nervous system is on a strain and lead him to give it the needed rest. The liver and bowels should be kept well to their duty. If constipation exists, the following may be used with benefit:

℞ Aloin, gr. ij;
Podophyllin, gr. iv;
Ext. hyoscyami, gr. viiss.
M. ft. pil. no. x. Sig.: One or two at bedtime.

If the kidneys are deficient in action but no albumin or casts exist, citrate of potassium in twenty-grain doses three times a day will be efficient. The patient should take a tepid bath every day to keep the skin in good condition. Thus far we have no cause to restrict diet or exercise: she will fare better in childbed if she keeps about her usual duties during pregnancy as far as possible without fatigue. Idleness is productive of despondency, which adds to the danger of eclampsia being developed.

But should albumin be found in the urine, the entire aspect of the case is changed. Her diet must then be curtailed and if possible she should live on an absolute milk diet; her exercise also must be carefully regulated, that tissue-waste may be lessened as much as possible, thus giving the kidneys less work to do. The bowels and skin must be kept in perfect order.—Lactate of strontium is reputed to have good effect in the presence of albuminuria, but no drug can be depended on to remove it, and the salvation of the woman depends almost entirely on restriction of diet.

It now becomes necessary to consider those cases in which, notwithstanding the utmost restriction of diet, the most careful regimen, and the intelligent and methodical use of drugs, the albumin not only persists but increases in quantity. If the woman has not yet reached the stage at which the fetus is viable—viz., the end of the seventh month—we may and should persist in our efforts to carry her up to that time that the child may have a chance for its life. Under these circumstances chloroform is of great value and may be given in fifteen- or twenty-drop doses three or four times a day. It has a good effect on the nervous system and the kidneys.

We will say that the woman has reached the end of the seventh month and has albumin in the urine, which is increasing in quantity. What shall we do? If we try to carry her to term, she will most certainly have con-

vulsions, and every convulsion will lessen not only her chances of life, but her child's also. If we induce labor now, she may and she may not have convulsions, but she is not so likely to as she will be two months hence or during the time intervening. If you decide to wait until her time is out, she may be taken with a convulsion in your absence from home, and valuable time—possibly a valuable life—be lost before your services or those of another physician can be obtained. Everything considered, therefore, in the presence of an increasing quantity of albumin I believe the physician comes nearest doing his duty when he induces labor, and that in a series of cases he will save more women and babies than if he tried to carry the patients to term.

We will now consider the management of cases in which convulsions have developed.

Tincture of veratrum viride in twenty-five-drop doses, given hypodermically, is the *best* of all the many remedies that have been brought forward as worthy of trial in these cases. Chloroform may be given by inhalation until the veratrum takes effect, which will be within half an hour. If the woman is in labor or is undelivered, lose no time, but begin at once the manual dilatation of the os, and as soon as it is sufficiently dilated apply forceps and deliver. Of course the patient should be under chloroform during this operation, which need not consume more than one hour even when there is no dilatation to begin with. This may sound extravagant, but I will not now stop to describe my method of dilating the os uteri *per manu;* suffice it to say my experience bears me out in the assertion. I think I may go even further and say I have never been more than half an hour in dilating the os sufficiently for all purposes, even in abortions of not more than five months. The deep incisions of the os advocated by some are absolutely unnecessary unless, for some urgent reason, it becomes imperative to deliver *instanter*.

The physician should not leave his post until the placenta is delivered, which I have usually found to be an easy matter. Do not wait for the uterus to expel the placenta, but deliver by Crédé's method while the woman is yet under chloroform; and if this cannot be quickly accomplished, introduce an *aseptic hand* and remove it. I have often done this and have *never* had a bad result.

In the vast majority of cases, when the treatment above outlined is carried out, there will be no further convulsions. It is the treatment indicated by Nature, for she nearly always sets to work in the very beginning of the disease to empty the uterus.

If the convulsions continue after delivery, or develop after the birth of the child, the same medicinal treatment should be made use of. If the veratrum is not at hand, hydrate of chloral given either by the mouth or per rectum in doses of thirty or forty grains is of benefit. Pilocarpine has some strong advocates, and is especially useful in relieving the kidneys when their action is deficient. Bromide of potassium is too slow to be of much service, but combined with other remedies may yield good results. Morphine is a favorite with many, but in my hands has not proved so useful as veratrum. In consultation with Dr. Feeney a few months ago we had an excellent opportunity to compare the action of the two drugs. The case was that of a colored girl aged nineteen who was seized with eclampsia at the end of the eighth month of pregnancy. At 2 A.M. Dr. F. began the use of morphine hypodermically in full doses, but it did not stop the convulsions, which would come on while the patient was snoring from the effects of the drug. We delivered her at 7 A.M. of a living boy, by forceps, but the convulsions continued every little while notwithstanding the use of large doses of morphine for two days after. Then she was given twenty-five drops of tincture veratrum hypodermically. After this she had no more convulsions. By the next day consciousness was returning, and she made a complete recovery, although this was complicated for a few days by an hysterical aphasia—demonstrated to be hysterical by placing the electrodes of a battery on her neck and chin and increasing the current until she vigorously demanded that we "stop." She had had four convulsions within the last hour before the veratrum was given.

The after-treatment consists in keeping the bowels well open; administering an alkaline diuretic, and diaphoretics if the skin is dry; and, above all, a milk diet.

Ten days ago I delivered a woman of twin boys by manual dilatation and forceps, who had been having convulsions twelve hours when I saw her. The woman and children were doing well when last heard from a few days ago.

The bladder should always be emptied by catheter, as an overdistended bladder may be a factor in the production of the symptoms.

After the convulsions have been stopped, it is well to keep the pulse below 60 per minute for several days by five-drop doses of veratrum viride repeated *pro re nata*.

The Therapeutic Gazette

EDITED BY
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Leading Articles.

SOME OF THE UNTOWARD EFFECTS OF THE BROMIDES.

At a recent meeting of the Association of American Physicians, held in Washington, Dr. S. Weir Mitchell contributed a paper on this subject, which, considering the vast experience he has had as a consultant and practitioner in the treatment of nervous diseases, possesses unusual interest aside from its importance in relation to general therapeutics. Every practitioner of experience well knows that the various preparations which are grouped together under the term "bromides" are capable of producing a certain number of disagreeable symptoms, but, in the minds of many, these symptoms are limited to the production of acne, more or less general, or to disturbances of digestion and intellectual brightness, the latter being of the most temporary kind.

Dr. Mitchell's paper, however, showed that the bromides in full doses are capable of producing far more serious symptoms than any of those which we have mentioned. Thus, he detailed a large number of instances in which the administration of massive doses of the bromides to epileptics produced great irritability of temper, moroseness, and even homicidal or suicidal tendencies. Further, he stated that in a number of instances this effect was so marked that the members of the patient's family had noticed it and had asked him in his treatment to avoid the use of bromides lest these disagreeable symptoms should arise.

He also cited an instance in the experience of Dr. Draper, of New York, in which an American patient staying in Paris received full doses of the bromides at the hands of a well known practitioner in that city, and developed delusions which necessitated the calling in of Professor Charcot in consultation about the case. The symptoms progressively grew worse, and Dr. Draper, being informed of her condition by cablegram, cabled back asking if she were taking bromides, as he had found out by previous experience with this patient that the bromides in full doses produced this train of symptoms. Discontinuance of the drug resulted in almost immediate recovery.

In other instances profound melancholia develops. Thus, a physician's wife who had suffered from epileptic attacks, continued, unknown to her husband and attending physician, the use of bromide of potassium in the dose of sixty grains a day, fearing that she would have another attack of epilepsy; the result was that mental symptoms became well marked, though the cause of this was not discovered until after some time, when cross-examination revealed the fact that she had been taking this drug; its discontinuance resulted in prompt recovery.

Other cases of a similar character were mentioned by Dr. Mitchell, and in the discussion which followed his paper similar views as to the possibility of the bromides producing these symptoms were expressed by both Dr. Janeway and Dr. Dana.

Dr. Janeway pointed out that in his experience similar symptoms had arisen not only from the use of bromides, but also from the use of those preparations now largely put upon the market by certain manufacturing chemists who advertise them to the general public as headache remedies, and which contain as their chief ingredients one of the bromides, one of the coal-tar derivatives, and caffeine. In these instances the mental disturbances which come on are probably produced by the remedies in the manner above mentioned, aided by the disturbing influence

of caffeine and the coal-tar products upon the nervous system.

Physicians attached to insane asylums or institutions in which a large number of epileptics are under their charge, have peculiar advantages for studying the effects of bromides and the danger of their producing the symptoms detailed by Dr. Mitchell, and we trust that some of our readers who have such opportunities will for their own sake and for the sake of other readers of the THERAPEUTIC GAZETTE contribute to our pages statements of their experience in regard to the untoward effects of these remedies.

Dr. Mitchell has certainly done a good work in calling attention to the fact that a class of drugs which are usually considered absolutely harmless, possess such unfortunate possibilities for evil.

THE REAL STATUS OF KOLA.

One of the most noteworthy facts in connection with the advances recently made in medicine and surgery has been the extraordinary increase in the number of drugs introduced as real additions to our materia medica list. Many of these have been proved by prolonged and exhaustive clinical research to be valuable aids to medical practice; others are as yet under trial; and still others have fallen by the wayside, having been "weighed in the balance and found wanting." It is to the last class that kola belongs. Like many other so-called remedies it was and is heralded to the medical profession as a panacea for many human ills, but, like its near relations in the advertising pages, it is found at the bedside to fall short of the claims made for it by its commercial supporters. It has been asserted, and with some show of scientific observation, that kola is peculiar in its powers and possesses medicinal virtues of unusual noteworthiness, but we have yet to meet, in actual practice, with any case which has been benefited by it any more than it would have been by similar doses of caffeine, which is its chief if not its only active ingredient. Certainly it possesses none of the peculiar properties of cocaine as a stimulant and general systemic supporter, and its value in the treatment of diarrhea is of no moment as compared with the powers of such old and homely remedies as kino and catechu. We may reach the conclusion, therefore, that the practical clinician has gained little by the introduction of this drug, since it possesses no peculiar properties which cannot be equaled by older and better known remedies.

So much for the subject of kola from the point of view of the reputable physician; and if its history stopped here, but little more need be said. Unfortunately, however, its discovery and scientific testing has been accompanied by the publication of pamphlets lauding its medicinal virtues to the skies; and these circulars have not only given an erroneous idea of its value to those physicians whose use of it has been limited, but have led manufacturing and retail druggists to place upon the market various preparations of the kola nut designed not for the use of the physician who finds his patient needing a stimulant, but for direct purchase by persons who, possessing no knowledge of medicine, grasp at each new drug which is placed before them with exaggerated claims that it is rejuvenating and strengthening. Every physician of experience meets almost daily with patients who are in a condition of profound nervous and systemic disorder following upon nervous exhaustion which has been aggravated by the use of such nerve-stimulants as kola or caffeine—persons who are deceived, by the very fleeting relief of distressing symptoms, into the belief that a cure of their ailments is obtained, but in reality resort more and more frequently to the stimulant, as the drunkard does to his dram, and with every dose only bury themselves deeper in the slough of nervous collapse.

Under such circumstances the medical profession has a double duty to perform, namely, to discourage by every means in its power the general employment of these preparations—by letting the laity know of the dangers which lie in the directions given by unscrupulous persons for their use, and by carefully avoiding the ordering or use of all preparations marketed by commercial houses which with the right hand issue circulars to the profession extolling their ethical and scientific labors, and with the left supply the laity with drugs, without physicians' orders, which are qualified to cause harmful results.

A BAD BILL FOR MEDICINE AND THE DISTRICT OF COLUMBIA.

Under the head of "Notes and Queries" in this issue of the GAZETTE we publish a memorial drawn up by a Committee of the Association of American Physicians in op-

position to the bill known as Senate Bill 1552, which is designed, so its title tells us, for the further prevention of cruelty to animals in the District of Columbia. Under this misleading title it is found that the bill, if it becomes a law, is intended to restrict experimentation upon animals in the Government laboratories and medical schools of Washington and vicinity, thereby preventing those additions to medical science which are invaluable and from which we have gained so much during the last few years. If there is one thing above another that American citizens have to be proud of—and particularly does this apply to those citizens who are medical men—it is the remarkably good work which has been done in the laboratories of the United States Government. It is upon work such as this that much of our prosperity in the way of health must depend, and we publish this editorial as a personal request to each reader of the THERAPEUTIC GAZETTE to write to his Representative and Senator at Washington urging the defeat of Senate Bill 1552, which, we regret to say, has already been favorably recommended by the committee having it in charge, notwithstanding the fact that representative medical and scientific men have by personal appearance before the committee, and by a large amount of evidence submitted to it, endeavored to prevent a favorable recommendation. Immediate attention is required in this matter, and we trust that the readers of the GAZETTE will write at once upon the receipt of this number asking that the bill be defeated.

TREATMENT OF RECENT FRACTURE OF THE PATELLA.

This very common injury, when treated by straps and splints, is invariably followed by fibrous union. Separation of fragments, although often slight at first, has a tendency gradually to increase. The consequent disability, though not crippling, is annoying. Even with the separation of one, two, or three inches, the leg can be extended as in the act of walking, but not forcibly. If the toe is caught, the patient is liable to fall. If both patellæ have been broken and are widely separated, there is often unseemly precipitancy in assuming the sitting posture, and some difficulty in subsequently rising. Patients sometimes become extraordinarily skillful in overcoming the disability: there is one instance of double fracture of the patella in Philadelphia, with wide separation of fragments, not preventing the patient from earning his living as a hod-carrier, his ascent and descent of the ladder being as nimble and apparently as certain as that of his fellow workmen. Usually, however, patients are much annoyed by the uncertainty and weakness of the power of extension—so much so that for some years the open operation, *i.e.* free incision, clearing the joint-cavity of blood-clots, and accurate apposition of the fragments by means of wire sutures passed through drill openings, was popular both with surgeons and patients. This operation still affords the best result in cases of comminuted fracture, and is one which in the hands of practitioners thoroughly skilled in the application of clean methods is safe and satisfactory.

After transverse fractures, however, there is offered by Barker a better operation—from the facts that it requires puncture in place of wide incision, thus lessening the danger of infection; that it can be completed in a very few minutes, thus lessening the danger of shock; and that the apposition secured by it is nearly as perfect and as permanent as that secured by incision, drilling, and wiring. This operation is not new, having been proposed by Barker in 1894, nor has it been practiced by him alone, many surgeons having realized the advantages of the method and successfully performed the operation. The consensus of opinion is strongly favorable to it, and this opinion is now based upon a sufficient number of cured cases to make it of distinct value.

Barker's latest communication upon the subject appears in the *British Medical Journal* of April 18, 1896: he states that since 1894 he has employed his method in every case of fresh fracture of the patella admitted to his wards, and that though he has used in the past many appliances for the treatment of this fracture without operation, and has later operated upon them with enthusiasm by the open method, he has never obtained better results than those which followed his own very simple procedure. To get the best results, certain measures must be adopted in the general treatment, and certain details must be carefully attended to in the suture. In the first place, the operation is only suitable in recent fractures. In the next place, it should be done as soon as possible after the injury—this generally means within a few hours. If the operation is delayed many hours, there is probability of the formation of

clots about the broken surfaces and in various parts of the joints which may give some trouble. On the other hand, if the blood is still quite fluid in the joint when the operation is done, it runs out readily when the punctures are made and leaves the joint-surfaces and the joint-cavity comparatively clean. Moreover, any periosteal fibres overhanging the fractured surfaces are easier to dislodge in the first few hours than later when lymph is beginning to be poured out and to fasten them down. The next question of principle is the employment of passive, and even slight active, movement after the operation. In earlier days he fixed the limb for a few days on a splint. This he now thinks superfluous, excepting in the case of violent patients—for instance, those suffering from delirium tremens. It may be even harmful.

The punctures made are simply covered by antiseptic pads, a layer of wool, and a bandage. The patient is allowed to move his leg about in the bed as much as he likes, if it is not painful. In addition to this, slight passive flexion is produced daily by the patient or surgeon with the hand behind the knee. With a good strong wire around the fragments this is quite safe, and as the wounds are only punctures they are not likely to be injured in any way by the trifling movement. Barker believes this early movement is of the utmost value as a means of preventing atrophy of muscle or bone and of encouraging the normal circulation and preventing stiffening and adhesions.

One of the most important measures to be adopted immediately after operation is massage. This is begun the day after operation, and continued for a couple of weeks; it causes effused blood to be absorbed, and keeps up the nutrition of all the structures involved.

The question of removal of the blood from the joint-cavity is also of especial importance. It should be effectually done by squeezing the fluid out through the punctures made in the joint.

The material used in the suture has been stout soft silver wire as thick as the No. 1 silver catheter, English scale. The way in which the wire is closed upon the fragments is of great importance. When the two limbs of the loop embracing both fragments are brought out of the lower puncture they should be crossed, so that the posterior one is carried upwards and to the left of the anterior one, which is pulled directly downwards. When now the posterior one is drawn upwards in the axis of the femur by the surgeon's left hand, and the anterior downwards in the axis of the tibia, the fragments are forced together very intimately. Then the operator's left hand (above) with the posterior wire is carried across to the right, and his right (below) with the anterior wire to the left, so making a twist which fixes the loop around the fragments securely. This twist is then repeated three times before the ends are cut off, leaving ends half an inch long. The twist of the wires is then pressed down through the puncture, and the ends are opened out transversely and buried in the soft parts over the ligamentum patellæ. For the whole operation a piece of wire about a foot long is softened by heating in a spirit flame.

As to the adjustment of the fragments. Before the wire is introduced, the operator takes each fragment between the finger and thumb of opposite hands. He always stands on the patient's right side. He then proceeds to rub the fractured surfaces one against the other, which in fresh fractures is easy enough. Thus rubbing them from side to side he is soon conscious that he has dislodged all blood from between them, or all clot and fibrous material, and that they grate one against the other like dry lumps of sugar. When he gets this sensation he is ready to introduce the wire. Then while he is preparing to close the wire on the fragments, as above, his assistant repeats the rubbing process and finally brings the fractured surfaces accurately together, with special care that the external and internal edges correspond, and that there is no rotation of either on its vertical axis. The closing of the wires keeps them in the same plane, one passing over the front and one over the back of the fragments. Then the wires are twisted as above. Care should be taken that the first twist be not too sharp, lest the wire be snapped. This occurred in one case of Barker's with a thinner wire, and he had to introduce a second wire. The second and third twists will tighten the first.

The steps of the operation are as follows:

First, everything about the field of operation, and the instruments, etc., are made aseptic. Then the lower fragment is steadied between the operator's left finger and thumb while a narrow-bladed knife is thrust exactly through the middle of the upper attachment of the patellar ligament, with its edge upwards cutting on the bone. When the blade has entered the joint it is withdrawn, still

cutting on the lower edge of the lower fragment, and enlarging the skin wound upwards to the extent of two-thirds of an inch. Through this opening a special long stout-handled needle without any wire is now thrust into the joint behind both fragments, and is made to pierce the tendon of the quadriceps close to the upper edge of the upper fragment, exactly in the middle line of the fragment. When its point appears under the skin it is cut down upon with the knife, whose edge should now be turned downwards and be made to enter the joint beside the needle, cutting upon the upper edge of the upper fragment, so as to leave nothing between the needle and the bone. A stout silver wire is now threaded through the eye of the needle, and the latter is withdrawn and then unthreaded. The empty needle is then again thrust through the same lower opening, but this time in front of and close to both fragments until it emerges through the upper puncture. Here it is threaded with the other end of the wire, and is withdrawn. Both ends of the wire now emerge by the lower opening. Each end of the wire is then threaded through holes in the centre of short metal bars for convenience in pulling. Then the posterior wire is drawn upwards and the anterior downwards as described above. When the fragments are adjusted, the bars enable the surgeon to make a powerful even strain on the wires, and twist them accurately. While the wires are *in situ*, but before they are twisted, all the blood in the joint should be squeezed out by pressure with the hands and kneading.

The whole operation should not take more than about five minutes from beginning to end.

Barker states that the saving of time by the method now described is very important, if nothing else is. To the surgeon it means much; to the patient the deliverance from prolonged anesthesia means much more. Two of his patients were over seventy, and to their lungs and general condition the difference between five minutes and fifty or more was probably immense.

Patients treated by this method who at the end of six or eight weeks are walking about with a firm limb and good flexion and extension, and with apparently bony union, offer a very marked contrast to those treated by splints who at the end of two or three months have much stiffness in the joints and have to be most careful about flexion for many months more, lest the bond of union be stretched and great weakness result. Many of these patients treated by splints, we know, are obliged to wear a support for the rest of their lives, and some recover with permanently stiff joints.

It should be remembered that patients who have once broken the patella are liable, whether operated on or not, to attacks of synovitis on overexertion of the joint. If such an attack should occur some months after the bone has been wired, it might suggest to the inexperienced that the wire was giving trouble. But this is not so, as the writer has seen in two or three cases. With a little rest the condition is quite relieved. One can hardly expect that after so severe an injury as that which fractures the patella there should be in all cases a complete re-establishment of the vaso-motor balance in the circulation of the synovial membrane.

Reports on Therapeutic Progress

FIBROID TUMORS OF THE UTERUS.

In the *Journal of the American Medical Association* of March 14, 1896, MARTIN gives us useful and practical hints as to the treatment of this severe and trying malady. He points out that the medical treatment of fibroids of the uterus has played an important part in the symptomatic relief and the prolongation of life of those afflicted with this dread condition. For convenience its therapeutics may be divided into general tonics, alteratives, sedatives, astringents, and special uterine tonics.

Rapid growth of a fibroid tumor and a condition of general good health in a patient seldom exist together. So true is this that the author assures his patients that the tumor will not increase in size rapidly if they can by some means keep themselves in a condition of natural tonicity. While undoubtedly the cause, frequently, of the general lack of tone, is the rapidly growing tumor, the growth of the latter may, he believes, be retarded by adopting means to counteract its effect upon the patient. Fibroid-tumor patients should be abundantly nourished. The loss of blood should be met by an abundant supply of wholesome, substantial food. Bitter tonics, such as quassia, calumbo, nux vomica, and cinchona, should be administered to increase the appetite. Iron should be administered in a form to be readily assimilated, in order to improve the blood. The patient should be

urged to drink milk and cream between the regular meals. Prepared foods, both of the nitrogenous and farinaceous order, should be employed to reinforce the ordinary diet. Predigested foods may be found of service if the digestive organs fail to stand the strain of overfeeding.

As a nerve tonic, the compound syrup of the hypophosphites, with small doses of quinine, strychnine and iron, is often of great service. Strychnine in gradually increased doses until the patient takes one-tenth of a grain four times a day, the author considers of great value as a tonic in these cases. The dose should begin at one-fortieth or one-sixtieth of a grain and be increased gradually, care being taken to avoid unpleasant constitutional symptoms. This tones the bowels, acts as a vaso-constrictor tonic everywhere and as a direct tonic to the muscular structure of the uterus itself, while it undoubtedly also constricts the vessels of the uterus and tumor. As a direct bowel stimulant and laxative, aloin with strychnine and hyoscyamus has few equals. Cascara sagrada may be employed as an alternative laxative. General stimulating baths often prove beneficial tonics to fibroid patients. Sea-salt baths, warm or cold, with judicious rubbing to establish reaction, are often recommended. Chloride-of-sodium baths may be employed in lieu of the sea-salt baths.

Hot water as a local tonic, employed as a vaginal douche, frequently relieves excessive congestion of the uterus. To accomplish this object, the water must exceed a temperature of 115° F., and the patient should use at least two gallons at a time and while in the recumbent position on the back. Chloride of sodium as an antiseptic and tonic may be dissolved in the water—three cubic centimeters to the pint; or, to get the advantage of an astringent, the same amount of powdered alum will prove of advantage. The water must be hot. Tepid water will favor hemorrhage.

Change of air from the seashore to the mountains (not too high an altitude), or from the mountains to the seashore, often improves health and retards the growth of these mysterious tumors. An ocean or a European trip will often bring a remarkable change for the better. Even a slight move which only involves a change of routine, or which surrounds the patient with a pleasant change of companions, will draw her away from herself and occasionally give just the impulse which is required to regain the lost tone.

Arsenic, muriate of ammonia, mercury and iodine have an important rôle in the therapeutics of uterine fibroids.

Arsenic in the form of the acid, or in Fowler's solution, one-twentieth of a grain of the former or five-drop doses of the latter, immediately following each meal, will often act as a powerful alterative tonic in these cases. While no specific action on the growth of the tumor has been demonstrated, the general effects of arsenic are frequently so satisfactory in maintaining a general condition of tone that it is strange it has not run the gauntlet of a specific.

Muriate of ammonia, which has none of the tonic properties of arsenic, and is inferior in alterative properties, has enjoyed a brief trial as a specific for fibroids. Its principal action lies in the direction of a hepatic stimulant. By favoring a free portal circulation its action in relieving uterine and pelvic congestion must be obvious. The author frequently employs it in five- and ten-grain doses, to be taken in half a glass of water on rising in the morning. It acts in this way as a very gentle stimulant to the bowels, and may be used as a substitute for saline mineral water. As a specific for fibroids, however, one must not place upon it much reliance.

Mercury, in the form of blue mass or calomel, is the most valuable alterative, laxative and tonic we have in all pelvic difficulties. Its efficiency and superiority as a laxative lies in the fact that it is our best hepatic stimulant: it unloads the portal circulation, relieves pelvic congestions, and favors the rapid removal of waste products from the pelvic organs. It too, possibly from the same reason, increases the patient's desire for food, aids healthy digestion, favors normal assimilation, and gives an impetus to the general circulation. Byford taught the value of this remedy as a tonic, when properly administered, in gynecological practice. As a laxative the blue mass should be given in one- to two-grain doses every evening for several days, then omitted for a like number of days. Following the night dose, the next morning a mild saline laxative should be administered —either a seidlitz powder, or from a drachm to two drachms of granulated citrate of magnesia in one-half glass of water. As an alterative tonic the blue mass may be given in half the above doses, extending over a period of twelve days. Calomel is a convenient form for administering mercury as a tonic and alterative; triturated with sugar of milk, doses of one-thirtieth of a grain twice or three times

a day may be given for a period of twelve days. An interval of twelve days should then elapse before resuming the use of the drug. The bowels should be kept free with saline laxative while the mercurials are in use, and care should be taken to avoid the unpleasant consequences of administering hydrochloric acid coincidently.

Iodine in the form of tincture, applied to the cervix of a fibroid uterus, or to the mucous membrane, has been much employed as a routine treatment for fibroids. As an alterative its effects on a fibroid tumor must be slight, but as a stimulant and antiseptic application to the inflamed endometrium it certainly will do good. The injection of iodine into uterine fibroids will scarcely be tolerated as a rational or at least as a desirable treatment at the present day.

The bromides, the coal-tar antipyretics, chloral, cannabis indica, hyoscyamus and opium are sedatives which succeed in relieving the suffering of many fibroid patients, and which, when judiciously employed, succeed occasionally in tiding them over desperate attacks which would prove fatal without their assistance.

In chronic conditions like the one we are considering, no physician should mistake the temporary effects of these sedatives for the effects of a curative agent. Symptomatic relief only can we hope for from them while we are selecting and marshaling our final conquering remedies.

The bromides are probably as safe and as enduring as any mild sedative where irritability and general nervousness characterize the patient's suffering, instead of actual localized pain. Bromides of potassium, ammonia, and sodium, mixed in solution and given in doses containing ten grains of each, the doses being administered at intervals of four to six hours, until nervousness is allayed and sleep obtained, is a favorite method of the writer's in the employment of this drug. Frequently the above combination given as a dose at bed-time will accomplish good.

Acetanilid, phenacetin and antipyrin have been of value in his hands in relieving severe menstrual pain accompanying fibroids. By giving them in appropriate doses at intervals of two to four hours during the painful period of menstruation, frequently complete relief is obtained.

Chloral is a favorite hospital remedy of the author's. He employs it for the uterine pain which accompanies menstruation exclusively —not as a steady remedy. The favorite method of administering it is to instruct the nurse to give twenty to thirty grains in three ounces of water as a small rectal enema, not oftener than once in four hours, for severe pain or sleeplessness. It does not affect the stomach when given in this manner. An effort is made to keep the patient in ignorance of the contents of the enema.

Cannabis indica as a remedy for pain in menstrual difficulties is one which the author has learned to appreciate. The remedy is so uncertain and variable in its actions that he usually resorts to something upon which he can place greater reliance. If a pure article can be obtained, a pleasant combination of cannabis indica in extract combined with ergot and valerianate of quinine for the pain of fibroid menorrhagia may be employed with advantage. The extract of cannabis indica (¼ to ¾ grain), the ergotin (½ to 1 grain) and the valerianate of quinine (2 grains) constitute a powerful uterine tonic, the cannabis indica and the valerianate modifying the pain which otherwise would be aggravated by the necessary effects of ergot and quinine.

Hyoscyamus, belladonna and stramonium are valuable sedative remedies to employ as alternatives in the long medical treatment which one is often obliged to conduct before these patients decide to have radical means adopted. While one sedative, hypnotic or anti-irritant remedy after another is being employed, these remedies will often give surprising aid as a temporary substitute for remedies which for prudential reasons we feel should be discontinued. The active principle, hyoscyamine or atropine, may be given in solution in appropriate doses, or in the small granules which are so accurately compounded by the large manufacturers of pills. The author frequently combines these drugs with the valerianate, the two making very effectual sedatives or anti-nervous remedies.

Gelsemium, valerian and asafetida are very valuable drugs, which can be employed with success in the treatment of fibroids. Extract of gelsemium, combined with valerianate of quinine, zinc, and iron, acts as a very reliable adjuvant in combating neuralgia, while in asafetida we have a remedy which the physician could ill afford to lose. Good full doses of asafetida, four to eight grains, four times a day, have carried many a nervous, sleepless, hysterical woman successfully through what otherwise would have been a painful menstrual period.

Opium is a dangerous remedy to employ

for the pain of fibroids. The remedy is so prompt and efficient with the majority of patients that it is an easy matter for a dangerous habit to be contracted, inasmuch as the difficulty is a chronic and constantly reverting one. If in desperate cases it is considered wise to employ the drug temporarily, it should be presented by the physician and given, if possible, without the patient becoming aware of the contents of the dose. A sufficiently serious condition, however, to demand the use of opium, should also demand some radical means of permanent cure.

Local astringents include such drugs as may be applied with benefit to the mucous membrane of the uterus or to the neck of the womb through the vagina. Local astringents may be employed, too, for the temporary effect they may have on the secretions of the uterus, or for the direct curative effect they may exert when applied to the mucous membrane of the fibroid womb. When the astringents are applied to modify temporarily the secretions of the uterus, for instance the excessive blood-flow, they are best applied on tampons. Alum is cheap and one of the safest and most efficient astringents to use in this way. Wicking, or strips of gauze, or cotton tampons, may be prepared and kept for emergencies, by dipping them into a twenty-per-cent. solution of alum in hot water and then evaporating the water of solution by exposure to the air. This leaves the alum thickly deposited in the interstices of the material. It is only necessary then to apply the tampon directly to the bleeding cavity, allowing the fluids of the cavity to dissolve the alum; or the tampon can be placed in warm water immediately before applying. Excessive and otherwise intractable uterine hemorrhage may, as a rule, be readily controlled by well placed uterine tampons well saturated with alum. Wicking or strips of gauze without knots is the best material to employ. The patient should be placed in Sims' position, the neck of the uterus grasped with a strong tenaculum, so as to expose the canal; then by means of a bulbous-pointed uterine sound the material should be systematically packed to the bottom of the uterus. Only where the hemorrhage is alarming is this procedure necessary. In ordinary bleeding a well placed vaginal tampon alone is necessary. For vaginal tampons, Byford recommends compressed sponges saturated with alum. They are made by taking a fine sponge, large enough to fill the vagina, passing a strong string through the centre to aid in its removal, and then, after dipping it in the solution of alum, well winding it with twine from one end to the other, compressing it into as small a space as possible. The twine should so compress the sponge as to make it assume an elongated form. It should then be laid aside and permitted to dry. Several of these should be kept on hand by the patient, she having been previously instructed how to employ them. After compression and drying the sponge will be of small size and of such shape that it can be easily introduced into the vagina, where the moisture of the parts will soon cause it to expand into an efficient tampon.

Astringents to the mucous membrane of the uterus are usually applied for the curative effect they may exert on the inflamed endometrium. For this purpose the tincture of the chloride of iron is a popular astringent. The author has employed with benefit a ten-per-cent. solution of chloride of zinc in glycerin and water. Solutions of nitrate of silver of varying strength have been employed. This is objectionable, however, because of the indelible stain produced by it. There is such a large variety of well known astringents which may be employed for this purpose that it seems like needless waste of time to enumerate them.

The application to the mucous membrane should be made, after the cervix has been exposed, by means of a flexible applicator wrapped with cotton. The canal should first be wiped as free as possible of all secretion by means of the applicator and cotton, and when that is accomplished the mucous membrane should be thoroughly painted with the astringent by passing the applicator, well wound with absorbent cotton and saturated with the drug, to the bottom of the uterus.

Of the astringents which reach the uterus and modify uterine hemorrhage when given internally, there is none which compares with *Hydrastis canadensis*. It contracts the blood-vessels and modifies the hemorrhage. It is so efficient that one is led to believe that it has a direct contractile effect upon the muscular walls of the uterus and tumor. While it acts as an astringent with special predilection for the uterus, it also is efficient as a bitter tonic. The fluid extract may be given in doses of one-third to one-half drachm three or four times a day. The author frequently combines the solid extract with ergot, grain doses of each, in the form of capsules, from one to four times a day. This drug actually seems to possess a curative effect,

not only in diminishing the amount of the blood-discharge, but also in decreasing the size of the tumor. When employed to modify hemorrhage, it should be given in good maximum doses of one-half to three-fourths of a drachm of the fluid extract three or four times a day during menstruation. If it is to be employed as a direct curative agent, it can be more conveniently and elegantly administered in capsule form, as already indicated, either alone or combined with other uterine tonics.

Tincture of *Cannabis indica* in from four- to ten-drop doses, given during the approach and continuance of menstruation, not only modifies irritation, but also acts as an astringent and hemostatic.

Ergot has played such a conspicuous and important rôle in the treatment of fibroids of the uterus that it would require an article to treat of its special uses.

HORSE'S SERUM AS A GENERAL TONIC.

LACRUZ, of Barcelona (*Arch. de Gin. Ostet. y Pediatria*, Dec. 25, 1895), has tried the effect of serum drawn from a healthy horse on several children in his wards. Doses of three to five cubic centimeters were injected daily for a period of three or four weeks. The serum seemed to act as a most powerful tonic. The red corpuscles increased in number, weight was gained, and the child became visibly stronger. There was no untoward secondary effect, except slight rise of temperature and some acceleration of pulse; neither was there any erythema or albuminuria. A trifling epithelial deposit seen in the urine indicated slight irritation of the kidney, and the urine became more acid. These phenomena, however, were merely transient. The good effects of the injections were quickly manifested; cases of athrepsia in particular were speedily benefited, and the cure was maintained. Sixteen cases of chorea treated in the manner described were cured in a period of fifteen days, on the average.—*British Medical Journal*, March 7, 1896.

THE TREATMENT OF PAIN.

In the *Berliner Klinische Wochenschrift*, 1896, Nos. 4, 5, and 6, GOLDSCHEIDER has published an interesting series of articles on "The Treatment of Pain." He commences by stating that in spite of the very different diseases in which pain is a prominent symptom, and the different intensity of suffering in those diseases, and the idiosyncrasies of patients, yet some attempt may be made to classify the methods adopted for dealing with this symptom. He then proceeds to divide "pain" into several classes according to its direct cause. In the first there is actual pain or suffering produced by excitation of the sensory nerves. In a second class the pain is much less distressing, lasts longer, and produces a general sense of discomfort, and is well expressed by the German word "Weh;" to this class belong slight headaches, the discomfort of dyspepsia, etc. A third class of pain depends upon an increased cerebral irritability, the so-called "mental pain." In a large number of cases the treatment of the pain is the same as that adopted in dealing with the disease, but in such cases certain principles are involved—a knowledge of the cause of the pain, and the possibility of dealing with it therapeutically.

With regard to the latter point two divisions may be made, in one of which the pain is dependent on a true affection of the nervous system, and in the other secondary, dependent on pathological changes in other tissues, such as inflammations, new-growths, etc. While in the second group the treatment of the pain is secondary to that of the causal condition, in the first the treatment is directly applied for the relief of the pain, and in many cases this is all-sufficient for the disease.

The remedies employed for the relief of pain may be classified thus:

1. The irritability of the affected part of the nervous system is treated by depressing anodynes, narcotics, cold, or electricity. Among these, morphine holds a prominent position; belladonna, hyoscyamus, etc., are also useful, and in some conditions of the nervous system bromides, especially when the pain partakes of the characters of the second division described above; in similar conditions the "anti-neuralgics" are often successful.

2. Remedies which act by counter irritation: blisters, sinapisms, liniments, and plasters, and the faradic brush. Goldscheider adds that these remedies act, not by the hyperemia which they produce, but by the sensory effects which directly follow, and he enters very fully into the theory of such action.

3. Means which bring about changes in the circulation: local blood-letting, cold, heat, and hydrotherapy.

4. Massage and graduated exercises. Under the latter head are included movements

which are employed in neuralgia of the legs and arms, and for painful joints.

5. Means which are employed to act directly on the central nervous system: hypnotism and suggestion.—*The Lancet* (London), March 7, 1896.

AN EFFERVESCING QUININE MIXTURE.

It is stated in the *Journal de Médecine de Paris* of March 8, 1896, that the following mixture is of advantage in irritable stomach when quinine is to be given:

℞ Sulphate of quinine, 2 grains;
Citric acid, 6 grains;
Simple syrup,
Syrup of orange flowers, of each, ½ drachm.

This is to be placed in a wineglass containing bicarbonate of sodium (from three to five grains) in saturated solution, and drunk during effervescence.

TREATMENT OF ACUTE GOUT.

JACCOUD (*La Semaine Médicale*, Jan. 15, 1896) divides this subject into three parts, according as one has to deal with the acute attack proper, the subacute attack, or the recurrent disease.

In the first case he does nothing during the first five days except to promote diuresis by the most simple means, such as the administration of a liter or so of Evian or Vittel water daily, with perhaps the addition of a little acetate of potassium; he does not even give milk, preferring that the "explosive energy" of the disease shall be expended on the organic tissues themselves. He applies anodyne embrocations to the joints, and covers up the parts with a thick coat of wadding. At the end of this time, if the fever and pains have subsided, the attack is nearing its end, and no further treatment is necessary; milk should now always be given. If no improvement has taken place, Jaccoud gives one and a half grains of hydrobromate of quinine with three-quarters of a grain of digitalis powder in pill form, five or six times a day; this usually produces the desired effect within two days. If, however, the pains are worse on the fifth day than at the onset, salicylate of sodium in thirty- to forty-grain doses should be given, provided the urine is free from albumin; after the second dose the urine is to be tested with ferric chloride, and if the salicylate reaction is feeble or wanting the drug must be stopped.

In the subacute form of the disease, which is characterized mainly by its prolonged duration, if this treatment, though diminishing the pains, does not cut short the attack on the ninth or tenth day, recourse must be had to colchicum. This the author prefers to give in the form of pills; he recommends Becquerel's formula, each pill containing one-half grain of extract of digitalis, two grains of sulphate (or preferably hydrobromate) of quinine, and one-half grain of colchicum seeds. Not more than two pills should be given a day, to avoid the risk of excessive purgation. No special anti-gout medication is to be employed between the attacks.

The treatment of recurrent gout resembles that of the subacute form.

Visceral gout unassociated with articular symptoms is a late complication, only coming on after years of typical gout; if there is no joint affection within twenty-four hours, colchicum is to be given at once. At the same time the joints usually affected are to be covered with powerful revulsants and vigorously blistered. Whether this abortive treatment succeeds or not, it is always to be adopted.—*British Medical Journal*, March 7, 1896.

EGGS IN THERAPEUTICS.

A mustard plaster made with the white of an egg will not leave a blister.

A raw egg taken immediately will carry down a fish-bone that cannot be gotten up from the throat.

The white skin that lines the shell of an egg is a useful application for a boil.

White of egg beaten with loaf sugar and lemon relieves hoarseness—a teaspoonful taken once every hour.

An egg added to the morning cup of coffee makes a good tonic.

A raw egg with the yolk unbroken taken in a glass of wine is beneficial for convalescents. —*Medical Record*, March 21, 1896.

THE TREATMENT OF SYMPTOMATIC ANEMIAS.

In the *Journal des Praticiens* of January 18, 1896, it is pointed out that anemia simply represents a condition in which the blood is deprived of iron, and that in the great majority of cases it is secondary to some other trouble. Thus we have an anemia due to lead poisoning, one due to malarial infection, another to Bright's disease, and those arising because of the pursuits of the individual.

If the anemia be due to exposure to lead poisoning, it is well to administer the iodides in company with iron; the following prescription is useful:

℞ Iodide of potassium, 15 grains;
Syrup of iodide of iron, 1 ounce;
Simple syrup, 4 ounces.

From a teaspoonful to a tablespoonful of this mixture may be given three or four times a day. It is also well for the patient to drink at the same time some one of the sulphur waters and to resort largely to a milk diet. Purgatives should be administered, particularly those which stimulate the liver, and in this connection the following prescription of belladonna and hyoscyamus is useful to prevent griping:

℞ Extract of belladonna,
Extract of hyoscyamus, of each, ⅙ grain.
For one pill.

If the anemia be due to malarial poisoning, hydrotherapeutic measures are exceedingly useful, as they not only yield their general good influences, but also overcome congestion of the liver and spleen. Cold douches must, however, be given with caution, lest they produce chill and fever. For internal medication, iron and arsenic form our chief remedies:

℞ Powdered yellow cinchona bark, ½ ounce;
Powdered centaury, 80 grains;
Powdered cinnamon, 30 grains;
Syrup, a sufficient quantity to make an electuary.

This may be taken in twenty-four hours in divided doses after each meal. In other cases we may employ:

℞ Arsenate of iron, 2 grains;
Extract of hops, 1 drachm;
Syrup of orange flowers, a sufficient quantity.
Make into forty-five pills, and give one or two pills each day.

In other cases arsenate of iron in granules, each of which contains one-sixtieth of a grain, may be administered. Should a minor be affected by profound anemia it is not to be forgotten that the condition may be due to the *Anchylostomum duodenale.* Under these circumstances the administration of iron is to be preceded by the use of the ethereal extract of male-fern in the dose of two teaspoonfuls a day.

THE USE OF ANESTHETICS, AND THE RESPONSIBILITY OF THE ANESTHETIZER.

The introduction of such drugs as chloroform and ether, and their adoption as means of rendering the patient insentient and passive during the performance of even the most complicated operations, have added one more to the grave responsibilities which surround the medical practitioner of to-day. That such responsibilities are borne more easily by some than by others, was to be expected. The duties which a medical man undertakes, and for which he is answerable to the law, are not always very clear from their legal aspect, and the legal responsibilities of the moment may vary according to the circumstances of the case. There are, however, certain broad principles underlying all such cases, whether they are emergencies or occur in the routine lines of daily practice, and it may be useful to consider these in this place.

The person who undertakes the control of the anesthetic is responsible for the safety of the patient. It has been held by persons of great weight in the profession that the real person who bears the burden of the responsibility is the surgeon who operates, and this is undoubtedly a correct theory as far as it goes. If a surgeon commits his patient to an unskilled chloroformist, knowing him to be such, any loss sustained through the neglect or ignorance of the anesthetist would be in part due to the surgeon, and the obloquy of permitting such an inexpert individual to approach his patient would undoubtedly belong solely to him. The patient, as a rule, looks to the surgeon to so arrange that the operation shall be carried out in all its details as well and as safely as knowledge and skill can effect. But the responsibility of the actual conduct of the administration of the anesthetic must in every case rest with the person whose allotted task it is to devote himself to it. The surgeon may be highly reprehensible if he permits a novice to undertake the administration of ether or chloroform, but the person giving the drug cannot be screened from his act by the surgeon. This clear statement of fact underlies the first canon of practice. The person who gives an anesthetic, unless he be a student who does it under the eye of his teacher (who then assumes the responsibility), must always be a duly qualified medical practitioner. It may be urged that many ward-orderlies or nurses are far more experienced than newly qualified men, but even were this so it is no valid reason for permitting unqualified persons to undertake the functions of medical practitioners; and this leads us to the second canon, which insists that only those should be permitted to give chloroform or ether who have had adequate experience in the use of these potent agents.

The familiarity which druggists possess with herbs and simples qualifies them in no respect to apply them in the treatment of disease; and even less would a nurse, however many times she may see an operation performed or chloroform administered, be competent in the eyes of the law or of the profession to undertake the one or administer the other. At one time the rule of thumb was dominant, but fortunately more exact methods at present prevail. The Buddhist praying machine and the heedless drenching of patients with anesthetics by irresponsible medical novitiates are alike disbelieved in by the thoughtful in such matters. The splendid work of Simpson, of Snow, of Lister, of Clover, of Lawrie, and many others, has driven home the lesson that safety in anesthesia means accurate knowledge and its stringent application to the methods adopted in giving an anesthetic. The average medical man has nowadays received a training at his hospital in anesthetizing, and hence there can seldom, if ever, be a necessity for calling upon an unqualified person to give chloroform. When such a step is taken it can only be done at the risk of the individual who resorts to this most dangerous development, and of the unqualified person who with his eyes open attempts to perform one of the most responsible duties falling within the province of a medical man. We are informed that in more than one small hospital it is the custom to entrust the anesthetic to a nurse. Such a practice can, we submit, only be justified by most exceptional exigencies. The surgeon should give undivided attention to the operation or the anesthetic, for nothing short of this can be sufficient for the patient's safety. No one can with safety supervise a person giving an anesthetic and at the same time perform an operation.

More than one action for damage has been brought against medical men who have lost patients under chloroform, and in such cases the only possible defense can be that everything was done for the unhappy patient which experience and skill could effect. Thus the fact must not be blinked that both from the point of view of medical ethics—which demands that one medical man shall, when he needs professional assistance, call to his aid the services of a qualified fellow practitioner—and from the purely legal standpoint, the responsibility of giving an anesthetic should be borne wholly and solely by a registered medical man who is competent to select his anesthetic and to administer it in the best possible way. Certain it is that any one who wittingly violates these rules puts himself outside the pale of professional and legal right.—*The Lancet* (London), March 7, 1896.

TREATMENT OF STYES.

In the *Journal des Praticiens* of January 25, 1896, the following treatment is suggested for this troublesome condition: Locally as soon as the evidence of a stye is appearing, an attempt may be made to abort it by cauterizing the spot with the fine point of a galvano- or thermo-cautery. In other instances, if it cannot be aborted it is best to aid the maturation of the boil by providing warmth and moisture, and evacuating the pus as soon as this is formed. In order to render the eyelid perfectly aseptic, it is well to wash the margins of the lid with one of the following solutions, hot:

℞ Bichloride of mercury, 4 grains;
Distilled water, 1 pint.

Or in place of this, if it is thought the individual will be susceptible to the action of the mercury:

℞ Bichloride of mercury, 2 grains;
Distilled water, 1 pint.

In other instances an ointment made as follows is of value:

Powdered calomel, 4 grains;
Vaselin, 80 grains.

As a general rule, styes tend to return, owing to auto-inoculation. Care, therefore, should be taken that the edges of the lids are kept well cleansed, and if necessary a mild antiseptic wash should be used for some time after one stye has healed in order to prevent the coming of others. Careful attention should also be paid to the condition of the alimentary canal, and it is pointed out that Bouchard believes that auto-intoxication from the alimentary canal may result in the formation of styes, through the entrance of staphylococci into the sebaceous glands of the lids. Very often in these cases the administration of naphthol is of value for this reason. The following prescription may be employed:

℞ Benzonaphthol, ʒ j.

Ft. in capsul. no. xxx. One to two capsules three times a day.

Or if the patient is young, with scrofulous, arthritic, or anemic tendencies, Fowler's solution in full doses may be administered with great advantage.

THE INFLUENCE OF ATROPINE ON THE URINE-SECRETION.

WALTI has studied this subject and reported his results to the *Archiv für Experimentelle Pathologie und Pharmakologie*, bd. xxxvi, h. 5, 6, 1895. He states that the effect of atropine on the urinary organs has been variously stated by different observers. Some have looked upon it as a diuretic. Others have come to the conclusion that it decreases the amount of urine. It has been suggested that its effects depend on the changes in blood-pressure it produces, but it has also been held that it acts on the kidney independently of such changes.

Thompson, experimenting on rabbits, came to the conclusion that it decreases the urine-flow. Such decrease, he thought, might possibly be due to the effect of atropine in preventing the tissue-change leading to the production of urea, which is a diuretic. He therefore injected urea before giving the atropine, but he found the atropine still diminished the urine-flow. He found, too, that this diminution took place while the arterial pressure was rising. From this he concludes that atropine decreases the urine-secretion by a direct effect on the kidneys, similar to that which it exerts on glands.

Walti has made similar experiments, the results of which he gives in detail. He injected sulphate of atropine into the external jugular vein of rabbits first narcotized by chloral hydrate, and measured the urine flowing from a cannula in the bladder every five minutes, registering the blood-pressure at the same time. The dose of the atropine salt he usually used (five milligrammes) was large, but rabbits bear this quantity well; sometimes this dose was repeated several times, and at times he employed a still larger one. He only gives the details of one experiment, in which he gave the atropine after simply determining the normal flow. In all the others—twenty-four in number—which he records, he injected the atropine after he had raised the secretion of urine by the intra-venous injection of urea, caffeine sulphonic acid, or theobromine sodium salicylate (diuretin).

The results of the experiments show that a diminution of the urinary flow usually follows on the intra-venous injection of atropine, independently of the blood-pressure, which is often raised.

Walti records a series of experiments made with different strengths and quantities of solutions of urea, which seem to show that the kidneys suffer no harm even when large quantities of urea are injected.

Albumin seems only occasionally to have been met with after the injection of urea, and only in mere traces. He says, however, that he found small quantities of sugar where an increased urine-flow had been produced by large quantities of urea.

Jacobi has recently noticed the presence of sugar when an increased secretion of urine has been induced by caffeine sulphonic acid.

Walti makes the interesting observation that atropine sulphate not only lessens the diuresis caused by urea, but causes, in some cases the diminution, in others the disappearance, of the sugar which has been due to the urea.

In considering the practical bearing of Walti's experiments, it must be remembered that the doses he used, though harmless in the case of rabbits, would be poisonous in man. He has not shown that atropine in all doses decreases urine-secretion, but only that this alkaloid in doses such as would be poisonous to flesh-eaters decreases the urine-flow and tends to prevent the appearance of sugar which the administration of diuretics has caused.—*Medical Chronicle*, March, 1896.

THE INJECTION OF ARTIFICIAL SERUM FOR HEMORRHAGIC AND TRAUMATIC SHOCK.

Apropos of the observations made upon the treatment of peritoneal septicemia by Berlin of Nice, and by Pozzi of Paris, SCHWARTZ, one of the surgeons to the Cochin Hospital of Paris, contributes a paper to the *Journal des Praticiens* of January 25, 1896, in which he records his own observations and those of others in regard to the value of injecting salt solutions in the conditions named at the head of this article. These injections may be either intra-venous or subcutaneous. They are made by means of a syringe containing about three drachms of fluid, or in other instances by means of a fountain syringe in which is placed Hayem's formula, as follows:

℞ Pure common salt, 80 grains;
Sulphate of sodium, 160 grains;
Sterilized and distilled water, 1 quart.

The needle and the rest of the instrument having been rendered aseptic, the solution at a temperature of about 100° to 102° is allowed to run gradually by gravitation into the subcutaneous tissues. Care should be taken that the liquid is not chilled in its progress through the tube before it enters the

body. Practical experience shows that this method of treatment is of the greatest possible value under the conditions named. If the state of the patient is exceedingly pressing, the cannula may be directly inserted into a vein of the arm or leg, and from a pint to a quart and a half of the serum, or normal salt solution, injected directly into the circulation. It is of the utmost importance to see that the liquid is absolutely aseptic and perfectly clear and free from foreign materials, which if present on entering the circulation might cause embolism or thrombosis.

TREATMENT OF LARYNGEAL TUBERCULOSIS.

The *Journal des Praticiens* of March 14, 1896, reminds us that all the world has observed the excessive suffering to which phthisical patients are subjected who are unfortunate enough to have laryngeal tuberculosis in the ulcerative stage, and it quotes the *Annales de Laryngologie* as having recommended the following palliative, to be used in a fine spray:

℞ Hydrochlorate of cocaine, 4 grains;
Hydrochlorate of morphine, 2 grains;
Antipyrin, 30 grains;
Cherry-laurel water, made by distillation, 2 ounces;
Water sterilized by boiling, 2 ounces.

From three to four tablespoonfuls of this solution may be used by atomization in every twenty-four hours.

Other persons prefer the use of very finely made powder as follows:

℞ Hydrochlorate of morphine, 3 grains;
Sugar of milk, 1 drachm;
Powdered gum arabic, 1 drachm.

Make into a very fine powder, which is to be puffed into the larynx.

Other cases seem to be benefited by the atomization of alkaline solutions, as, for example, that of Vichy water.

If powders are employed, it is of the greatest importance to see that they enter the larynx and that they are not so clumsily given as to produce spasm or excessive cough. As a rule, the use of the solutions named above or of the powder relieves the pain and dysphagia and permits the patient to take food with fair comfort. The advantage of the solution named is that its anesthetic action is more prolonged than is that of cocaine. Practically we may conclude that the use of the spray is infinitely superior to that of the powder in every instance.

THE DIAGNOSIS AND TREATMENT OF MELANCHOLIA.

In the New York *Polyclinic* for March, 1896, PRITCHARD tells us that the question of treatment is one of peculiar interest and importance to the general practitioner, chiefly for the reason that if the domestic situation can be controlled by the family physician the patient should most emphatically be treated at home. In all cases of simple melancholia, and in most of the agitated and stuporous cases, public asylum or institution environment is absolutely and positively harmful. Nearly all such patients are fully and appreciatively cognizant of their surroundings, which fact is a sufficient explanation of the harm done by incarceration in an institution for the insane.

In treating these cases at home two conditions should be demanded by the attending physician, positively and imperatively: first, absolute control over the patient's personal and domestic life; and, secondly, the presence constantly of an attendant or nurse, preferably one with special training. As a rule the patient should be isolated from the rest of the family, leaving the personal influence and domination of the physician and nurse free from interference. The patient's room should be changed both in location and furnishings, with the double object of interrupting painful associated ideas, and the establishment of stimuli to object-consciousness in surroundings. In the debilitated cases partial enforced rest should be obtained by requiring the patient to lie abed until 10, 11 or 12 o'clock. A patient with melancholia, especially the agitated and the stuporous forms, should never be left alone night or day. The danger of suicide is always present and is often a matter of sudden impulse, peculiarly liable to develop if the patient is alone. The diet should be nutritious and quite sufficient. A low diet, so called, is rarely if ever indicated. If, through delusions or in an effort to commit suicide in this way, the patient refuses to eat, forced feeding should be resorted to by rectum or mouth, or, if resistance is excessive, by the catheter introduced through the nose, down the throat.

The drug treatment resolves itself into three indications: the relief of insomnia, the correction of visceral derangement and disturbed secretions, and the relief of psychic pain. For the insomnia we have a large and satisfactory supply of agents. It is never wise to trust to nature or the so-called simple

remedies for the relief of this insomnia, but some reliable hypnotic should be used at once. Pritchard prefers trional above all other drugs; it is free from injurious or disagreeable effect or action, and is more certainly reliable than any other. The dose should be from ten to twenty grains in water, shortly before retiring. It may be combined with an equal quantity of sodium or potassium bromide with better effect occasionally. It does not seem to lose its hypnotic action even after prolonged continuance, nor does it tend to establish any drug habit. Occasionally the sleep induced from a full dose is alarmingly prolonged, but this is a rare idiosyncrasy and of no harmful significance. Next to trional, he has found chloralamide in doses of twenty to thirty grains, in the form of an elixir, very satisfactory; a second dose is often necessary, and sometimes it fails altogether. Sulphonal in ten-grain doses is quite reliable, given in hot milk or coca; it occasionally affects the circulation, however, depressing the heart markedly; he has seen two cases of serious cardiac weakness and cyanosis follow a ten-grain dose in melancholia. Other hypnotics which may be used—but they are inferior to the three mentioned—are somnal, chloralose, hypnol, paraldehyde, amylene, chloral hydrate, and the alkaloids of hyoscyamus.

The correction of visceral derangement and disturbed secretions brings to the front a question of importance in the etiology, in connection with which the etymology of the word melancholia is of interest. In many of these cases there is present a state of autoinfection or toxemia from decomposition of food in the stomach and intestines, with a resulting production of ptomaines and toxins, which act with a selective affinity in the predisposed upon the nervous centres. When the decomposition is stomachic, there is often a dilatation or catarrh present, or both may be associated. If the trouble is duodenal, an important cause is often a deficient or perverted bile, with an absence of its antiseptic properties and consequent putrefaction and resorption. The condition of copremia, so termed by Hewitt, described as occurring in young girls—a self-poisoning from retention and resorption of fecal matter—is occasionally the cause of a melancholia, acting in the same way. Constipation should always be relieved and kept relieved, but drastic cathartics should be avoided. A reliable preparation of cascara sagrada acts excellently well, especially if supplemented every week or two with decimal doses of calomel. The large group of intestinal antiseptics serve an invaluable purpose in these cases. First in the list comes subgallate of bismuth in doses of five to seven grains after meals. Almost as efficacious is salol in the same dose. He often gives them in combination, adding, if anemia is strikingly manifest, an equal quantity of ferratin. Naphthalin, beta-naphthol, resorcin, and others of this group may be employed. Occasionally where the physical indications are quite evident, particularly in the lithemic cases, he has used dilute nitromuriatic acid in ten- to twenty-drop doses, well diluted, before meals, with excellent effect.

For the relief of the psychic pain, nothing equals opium used in the form of the aqueous extract, in doses varying from one-eighth to one-fourth or one-third of a grain, three or four times daily. It is almost a specific in its action in relieving the psychic depression. Great care should be taken not to discontinue its use prematurely, and it is safer to prolong it even after all symptoms have disappeared for a week. Codeine is sometimes a satisfactory substitute in slightly larger doses. He has never used tincture of opium or morphine, finding the others satisfactory and free from constipating tendencies or danger of a drug habit. The physician, by the way, should dispense the opium in these cases himself. The moral effect is better and the patient safer. The author has tried *Cannabis indica*, but without much positive evidence of effect, good or evil. Hydrotherapy is much lauded by its advocates as a measure of relief, the truth of which the writer is unable to confirm or deny, never having given it any extended trial.

It is scarcely necessary to call attention to the desirability of investigating the status of all the visceral organs, the kidneys, heart and lungs especially. The toxins of Bright's disease may be the cause of a melancholia which is purely symptomatic, but none the less actually existent and demanding treatment. Phthisis is sometimes an associated and related condition also.

RECTAL ALIMENTATION.

The following prescriptions are given by the *Journal des Praticiens* of March 14, 1896:

As a nutritive enema:

℞ Cod-liver oil, 5 ounces;
Yelk of one egg;
Lime-water, 10 ounces.

This mixture is sufficient for four or five enemata, which may be given during the course of a day. In other instances the following may be employed:

℞ Cod-liver oil, 5 ounces;
Yelk of one egg;
Chloride of sodium, 40 grains;
Water, 10 ounces.

This is also sufficient for four or five separate enemata.

In still other cases, where it is desirable to use the hypophosphites, and the stomach will not retain them, the following rectal injection may be employed:

℞ Cod-liver oil, 1 pint;
Gum tragacanth, 35 grains;
Gum arabic, 1½ ounces;
Hypophosphite of lime, 35 grains;
Lime-water, a sufficient quantity to make 1 quart.

From four to six ounces of this liquid may be used as an injection.

For dysentery:

℞ Sulphate of quinine, 10 grains;
Powdered ipecac root, 5 grains;
Chloride of ammonium, 10 grains;
Tincture of opium, 12 drops;
Distilled water, 1 ounce.

Of this a small teaspoonful may be taken every four hours.

THE TREATMENT OF UTERINE FIBROIDS BY ERGOT.

MARTIN tells us, in the *Journal of the American Medical Association* of March 21, 1896, that ergotin promises a complete cure in intramural fibroids which consist of one or few centres of development lying in close proximity to the mucous membrane. The uterus in such cases is considerably enlarged, the canal is long and tortuous, the symptom of uterine hemorrhage is conspicuous, and the normal muscular tissue of the uterus is hypertrophied. Ergot in large doses, continued for some weeks, will cause the hypertrophied muscles of the uterus to contract and to gradually squeeze the fibromatous centre first toward the mucous membrane, then beneath the mucous membrane, and finally into the uterine cavity, where the uterine expulsive pains will effect its deliverance. The enucleation of such a tumor can be materially assisted, as it should be, by incising its capsule as it begins to protrude beneath the mucous membrane.

When such centres are expelled effectually, the uterine pains will cease, the hemorrhage will lessen, and the uterus will soon be found of normal size.

Pedunculated fibroids are somewhat differently affected by ergot, according to whether they are submucous or subperitoneal. If the uterus is considerably enlarged and its normal muscular tissue hypertrophied, there is some hope that the pedicle of a subperitoneal pedunculated fibroid will gradually become restricted by the uterine contractions, the nourishment of the tumor supplied by the pedicle be diminished thereby, and gradual atrophy of the stranded mass result. But while this may occur with a subperitoneal tumor, it may be counted on much more surely if the tumor is submucous. In the latter case the nourishment of the pendent tumor is not only impaired by the constriction of its pedicle's base, but the expulsive effort of the uterus itself will, in its effort to rid itself of the foreign body, stretch and thin its pedicle until its blood-vessels are eradicated and the tumor decreases from starvation. Sometimes the decrease is only partial, a small amount of blood still gaining access to the mass; then it is only necessary to catch the growth in a forceps and twist it from its weak stem, when the uterus will contract to its normal state if there are no other centres of development.

A true interstitial fibroid is seldom, if ever, cured by ergot. While the muscular fibres of the uterus are often enormously developed, there are no distinct masses for them to work on when stimulated to contraction—nothing for them to get rid of but their fellow fibres. In this they may partially succeed by producing atrophy of one another by pressure, and lessening the blood-supply by contracting their blood-vessels. This, however, as experience has taught us, is a slow method of diminishing a fibroid tumor. If large doses are systematically administered for a long time, menorrhagia can often be materially benefited, but seldom permanently relieved.

According as the physician seeks a mild or an active effect of ergot should he regulate his dose. In the first instance ergot is administered in doses just sufficiently large to maintain a tonic contraction of the arterioles and of the uterine tissue without producing the pain which is a constant accompaniment of the violent clonic contractions of the uterus. When the active effects of ergot are sought, large and often-repeated doses are administered in such a manner as to obtain promptly and fully the physiological effects of the drug.

When mild effects are sought, ergot can usually be administered by the stomach.

For this purpose the author usually employs the purified extract called ergotin, administered in the form of capsules. Capsules containing from three to five grains each, given at intervals of four to six hours, will seldom disagree with the patient. Intervals of six hours, unless active effects are desired, are short enough. Frequently the dose of five grains will be too large for a simple tonic potion. He frequently gives the ergotin in two-grain doses in capsule, combined with one-fourth of a grain of the extract of nux vomica, distributing the doses so that they are taken before meals and at bedtime. Ergot can be given with good results in mild doses in rectal suppositories. Occasionally it will be tolerated in the form of the fluid extract by the mouth; there is very little occasion, however, if a patient can take a capsule, for submitting her to this nauseating dose.

When we desire to obtain the active effects of ergot, some management is necessary in order to get into the system of an ordinary woman a sufficient dose of the drug without at the same time disturbing the functions of the digestive organs.

Ergotin in capsules, in five- and ten-grain doses, frequently will be tolerated by the stomach almost indefinitely. Occasionally a much smaller dose will be utterly rejected; the drug may then be administered in eight- to ten- or fifteen- grain rectal suppositories at intervals of six hours. Decided physiological effects may frequently be obtained in this manner. The lower bowel should be kept clear of all fecal matter, and the suppository placed high: suppository tubes may be employed to advantage for the purpose of placing the suppository mixture higher in the bowel than is possible with the ordinary suppository. Small rectal enemata of the fluid extract may be employed as a means of obtaining the active effects of the drug.

Hypodermic injections of fluid preparations of ergot succeed in obtaining the most prompt and efficient physiological effects of the drug, while they possess the objection of producing not a little pain and occasionally abscesses. The abscesses may be avoided by attention to aseptic principles, and the pain can be materially attenuated by selecting non-sensitive portions of the skin and making the injections deep.

As ergot at best can scarcely be termed an actual curative agent for fibroid of the uterus (except in rare instances), it follows that the duration of treatment must vary entirely with the case in hand, the results sought, and the judgment of the particular physician treating the case.

If the case is an ordinary bleeding interstitial fibroid, of uniform contour, in which there seem to be no submucous projections which we might hope to expel by means of heroic doses of ergot, two to five grains of ergotin in capsules might be given three times a day for several months, the effect sought being a general vaso-motor tonic action, with a special predilection for uterine vaso-constriction, and uterine shrinkage due to long-continued tonic muscular contraction of the organ, the subjective results being diminution of the menstrual discharge and of the pressure symptoms, and improvement in flesh and strength.

If the case is a submucous fibroid in which the attempt is to be made to accomplish the expulsion of the mass by contraction of the uterus stimulated by heroic doses, ergotin in the form of large suppositories or (better) in hypodermic injections may be administered until the result is accomplished. When the tumor is expelled the remedy is immediately suspended.

If the case is one of interstitial bleeding fibroid, and the object is to control or to modify the monthly flow of blood, ergot in good full doses, either by capsules, suppository, or hypodermic injections, should be commenced a few days before the menstrual period, and be continued until the flow has ceased, when it can be discontinued until a week before the next menstruation.

So one must take into consideration the physiological effects of the drug, under its varying doses, as well as the variety and character of the tumor, and with these points well in hand he must exercise his judgment in each individual case.

THE TREATMENT OF HICCOUGH BY TRACTION ON THE TONGUE.

Apropos of the communication of Laborde upon the use of rhythmic traction on the tongue for the resuscitation of persons apparently dead from failure of respiration, LÉPINE reports in *La Tribune Médicale* of February 12, 1896, his use of this method in the treatment of obstinate hiccough. The patient was a young girl, not hysterical, but suffering from repeated and exhausting hiccough. Traction upon the tongue relieved her with extraordinary rapidity. Similar cases were also reported by Viaud.

THE PREVENTION OF ABSCESS OF THE BREAST.

According to the *Journal des Praticiens* of February 22, 1896, TARNIER has employed with success, and recommends, the following formula, in which tarlatan should be soaked and then applied to the inflamed area:

℞ Glycerin, 1 pint;
Sterilized water, 6 ounces;
Alcohol, 1½ ounces;
Biniodide of mercury, 2 to 4 grains;
Iodide of potassium, 5 grains.

OINTMENT FOR CHAPPED SKIN.

℞ Lanolin, 3 ounces;
Glycerin, 4 drachms;
Boric acid, 1½ drachms;
Salol, 1 drachm;
Hoffman's anodyne, 5 drachms;
Menthol, 15 grains;
Oil of citronella, 3 minims.

—*Journal des Praticiens*, Feb. 22, 1896.

DIGITALIS, STROPHANTHUS AND ALLIED AGENTS IN CATARRHAL AND INFLAMMATORY DISEASES OF THE AIR-PASSAGES.

ADOLF GRUSS (*Med.-Chir. Central-Blatt*, Nos. 8 and 9, 1896) says he has found digitalis and kindred agents at times of extraordinary service in persistent heart lesions, in fatty heart, and in such hypertrophied hearts as threaten to play out. He regards alcohol in all its forms as preferable to digitalis in fatty degeneration of the heart; digitalis must here be used with extreme care. He regards as very objectionable the method of giving huge doses of digitalis immediately after the diagnosis of pneumonia. He has seen the severest pneumonias recover under the use of cold baths as they are given in typhoid fever, and he cannot see why, if cold baths are a heart tonic in typhoid, they should not be the same in pneumonia; his own experience leads him to believe they are.

An excellent heart tonic in all infectious diseases as well as in diseases of the heart is an ice-bag or other cooling apparatus over the heart. He has seen in arterio-sclerotic valve-lesions, with disturbed compensation, not only an increase in heart power, but a surprising increase in diuresis, follow this method of treatment. He has had the same result in pneumonia with weak heart.

Digitalis may be abused in pneumonia, just as alcohol is. One should not forget that a single powerful impulse is not lasting in its action.

Gruss says he finds the digitalis and strophanthus treatment far more frequently successful in the catarrhs of emphysematous patients than in croupous pneumonia. The bronchial catarrh and dyspnea often subside with surprising rapidity. If these drugs fail, he gives diuretics. He finds that diuretin acts better when arterio-sclerosis exists as a complication, but it has also acted better than digitalis in cases of aortic insufficiency without arterio-sclerosis. He orders it in these cases in broken doses, one or two grains a day, whereas the dose in dropsy and ascites must be much greater.

Gruss's experiments with caffeine sodium salicylate are too few to justify a conclusion, but it seems inferior to theobromine sodium salicylate.

He has noticed that heart tonics should not be stopped suddenly. He therefore gives digitalis at first with ipecac in infusion, of the former one grain a day, and after a few days—the number of days depending upon the individual case—he discontinues digitalis and gives tincture strophanthus, ten drops three times daily; then after a few days he lessens the strophanthus by one drop a day and so gradually stops it. Sometimes diarrhea is caused by the strophanthus; this can be controlled by bilberries, either dried or preserved in red wine.

Influenzal catarrhs also yield to the cardiac tonics already specified: Gruss reports two cases in which digitalis and strophanthus achieved very good results. He has also obtained very satisfactory results in more or less extensive and obstinate bronchitis. The result in two cases of catarrhal pneumonia was striking. In one there had been for several days dullness on both sides of the vertebræ, with violent cough; the dullness cleared up rapidly, the bronchi freed themselves of mucus, and the violent dyspnea was well in from twelve to twenty-four hours. Gruss says he could support this observation by many others, but only mentions two cases, in which a violent tracheal catarrh and bronchitis yielded rapidly to digitalis and strophanthus. He looks upon the existence of obstinate catarrh with deficient diuresis, in the absence of considerable sweat or diarrhea or violent gastric catarrh, as demanding digitalis or strophanthus.

Gruss mentions a case of extraordinarily violent laryngeal spasm, in a woman eighty-two years old. The attacks increased in frequency, and subsequently a catarrhal pneumonia developed, which began rapidly

to mend from the day strophanthus was ordered.

Gruss quotes with approval the statement of Prof. F. A. Hoffmann, that under the use of digitalis first the left ventricle begins to act more strongly; it lightens, through its work, the right heart, which now also keeps up stronger work. On further use of digitalis there occurs a uniformly increased capacity for work of the whole heart. "It is seen, therefore, that this remedy can be given for two purposes—to adjust a persistent stasis, and to remove a weakness of the heart's action."

THE USE OF GUAIACOL SUBCUTANEOUSLY IN THE TREATMENT OF PULMONARY CONSUMPTION.

In a leading article having a title similar to this, in the April issue of the THERAPEUTIC GAZETTE, was mentioned a paper by Coghill, of England, who strongly recommended the hypodermic injection of guaiacol in tuberculosis. We now find in the *Journal de Médecine de Paris* of February 22, 1896, an article by Dr. TANNEUR in which he also recommends this treatment and states that in his opinion the guaiacol should be given hypodermically in sterilized and acidified olive oil. He believes the best results are obtained by giving the injections once or twice a day, in the morning or at night, or both. In regard to dosage, something depends upon the febrile movement. If there is no fever, he begins by giving one grain of guaiacol daily, and later as much as two or three grains during each day. In still other instances as much as from four to eight grains may be employed if the patient stands the remedy well and seems to be benefiting by its use. In more advanced cases of tuberculosis, where there is an active febrile movement and the disease is progressing rapidly, smaller doses may be employed, but instead of once a day they are to be given twice or three times a day, and after a number of days have elapsed a steady progression in the quantity administered is to be resorted to.

The most important symptom to guide us in the administration of the drug is expectoration. As a general rule this rapidly diminishes and is modified in character by this treatment, changing from yellow nummular masses into a light-colored, non-purulent sputum. Of course, if small doses produce this good result, the dose is not to be increased. The cough is also somewhat of an indication as to the amount of the drug to be given, as it usually diminishes coincidently with the change in the character of the sputum. As the drug exercises its favorable influence, dyspnea becomes less marked and fever gradually disappears. If the fever is persistent, the larger doses, given once, twice, or thrice a day, must be resorted to.

TREATMENT OF CHRONIC BRONCHITIS.

It is pointed out by CANTAGREL, in *La Médecine Moderne*, March 11, 1896, that chronic bronchitis is very apt to be found in the two extremes of age. Not only so, but in children acute bronchitis is frequently found, particularly in association with malnutrition and general debility. Commonly, too, it will be found that such children have enlarged lymphatics, are scrofulous or rachitic, and, if their bronchitis is of the chronic form, naso-pharyngeal lesions such as adenoid vegetations or hypertrophy of the tonsils are frequent. Among older persons the more common causes of chronic bronchitis, aside from lymphatic and scrofulous tendencies, are the gouty diathesis, insufficient action of the heart, emphysema, and asthma, and it is claimed by Bouchard that persons young or old who suffer from dilatation of the stomach very frequently have bronchitis. Indeed, this author goes further and claims that dilatation very frequently produces lesions in the respiratory passages. Nearly all persons suffering with bronchitis are exceedingly sensitive to cold, and for this reason it is advisable that they should be sent whenever possible to some climate where the variations in the daily temperature are not great and where excessive cold is rarely or never met with. Such patients should also receive as large quantities of cod-liver oil as their digestion can stand, care being taken at the same time that all naso-pharyngeal lesions are attended to by local applications. If the disease occurs in a child that is badly nourished, the diet must be regulated and stimulating and nutritious food given. As a general rule, aside from these directions, much medication is undesirable except for the purpose of meeting pressing symptoms.

The two symptoms which most frequently demand attention are, cough and expectoration. Many practitioners find that the syrup of lactucarium is a sufficiently efficacious remedy to stop the cough and allay the irritation of the respiratory passages in children. In those who require more active medication, the syrup may be employed as a sedative

vehicle. In other instances certain of the balsams, such as the oil of sandalwood or the oleoresin of cubebs or copaiba, may be administered to adults suffering with chronic bronchitis, for the relief of both cough and expectoration. Many adults may also take sulphur-waters with great advantage.

THE SERUM TREATMENT OF PUERPERAL FEVER.

GAULARD (*Presse Médicale Belge*, Nov. 30, 1895) reports two cases of puerperal fever treated by injections of serum.

CASE I.—A rachitic woman, with a contracted pelvis, had a prolonged labor on August 26: face presentation; the perineum was split to the anus, but was sutured at once. On Sept. 2 the temperature rose to 105°, where it remained for four days. On Sept. 6 Gaulard saw her; the pulse was then 140 and irregular, and diarrhea was present; there were some sloughs on the vagina, and the perineal wound was suppurating. He curetted the uterus, bringing away nothing of importance, packed it with iodoform gauze, and resutured the perineum. The next day the temperature had fallen to 102.7°, but on Sept. 8 it rose again and her general condition was very grave; ten cubic centimeters of Marmorek's anti-streptococcic serum were then injected into the abdominal wall. The temperature was rather lower next day, and an injection of two cubic centimeters was given. From this time the temperature fell steadily, and the patient was soon out of danger. The uterine plugs were renewed every day.

CASE II.—A rachitic woman was brought to the clinic on Sept. 24, in her fourth pregnancy. The first labor was natural; in the two others delivery was effected by forceps. The antero-posterior diameter of pelvis was 3½ inches. An unsuccessful attempt to apply forceps had been already made, so a basiotripsy was performed, delivery effected, and a douche of 1:4000 perchloride of mercury given. The temperature rose on the 26th, and in the evening of the 27th it reached 104°. The uterus was swabbed out with creosoted glycerin, some putrid fragments coming away, and then plugged with iodoform gauze. On the 28th cultivations of streptococci were obtained from the discharge, so ten cubic centimeters of anti-streptococcic serum were injected (temperature then 104.9°). On Sept. 29 a second injection was given, the temperature still rising. On Sept. 30 a third injection was given; evening temperature 102.9°. Oct. 1 a fourth injection of ten cubic centimeters was given. Oct. 2 the evening temperature was 101.5°, the general condition satisfactory, and recovery hoped for. No pain was felt at any time. After this the temperature fell steadily, and reached normal on Oct. 4. However, later in the evening two days before, she was seized with bilious vomiting and meteorism, the pulse remaining at about 120, and on the 4th and 5th her condition grew worse; she became semi-comatose, nothing controlling the vomiting, and died on the 6th. The author had never before seen a case of puerperal fever die during defervescence, and he believes the injections of serum were the cause of the vomiting. He fears that too much serum was used, for at the post-mortem there was no sign of peritonitis or of any suppuration. The question of the maximum dose, to exceed which is not safe, has yet to be settled. He is sure this treatment does not do away with the necessity of using the curette, which clears away any débris and cleanses the centre of infection. If the germs have already passed into the circulation, the serum can be employed against them and their toxins.—*British Medical Journal*, March 7, 1896.

THE INDICATIONS FOR INDUCING ABORTION.

The *Journal de Médecine de Paris* of February 9, 1896, gives the following summary of an article by JAFFE, of Hamburg, upon this subject:

He believes that artificial abortion is justified, first, in cases of incoercible vomiting of pregnancy; second, where the uterus is suffering from extreme retroflexion or prolapse, or where there is a hernia which is in danger of strangulation; also in pernicious anemia, in grave chorea, in great hypertrophy of the mammæ, in excessive headache with insomnia, in marked pulmonary tuberculosis, or where emphysema is excessive. Great cardiac dilatation and feebleness justifies an abortion, not only for the purpose of relieving the mother, but also because heart-failure is imminent during labor. It is not to be thought, however, that nephritis is an invariable indication for the production of abortion, as by careful treatment this unfortunate complication can sometimes be tided over.

Very frequently, too, in heart disease careful treatment by rest and the administration of proper cardiac and systemic tonics will enable the heart to stand the strain both of

pregnancy and labor. Should, however, there be any signs of degeneration of the heart-muscle, then interference is necessary.

THE TREATMENT OF ACUTE BRONCHO-PNEUMONIA IN CHILDREN.

In *L'Abeille Médicale* of March 14, 1896, we learn that GENDRE carries out the following line of treatment in this class of cases:

In the first place, it is exceedingly important that hygienic details should be carefully attended to. Not only should the air of the room be frequently renewed, but it should be kept at an even temperature and moist. Heat should be applied to the feet and lower extremities if they are at all cold, and water containing antiseptic substances should be boiled in order to keep the air of the room moist. It is also necessary that measures should be undertaken to sustain the nervous system of the patient. All depressing and nauseating remedies, such as tartar emetic or kermes mineral, senega, ipecac, and sedative substances like aconite and opiates, should be avoided. Similarly, remedies which cause very profuse sweating, such as jaborandi or acetate of ammonium, are not to be used. Care must be taken that no remedies are given which can by any possibility disorder the stomach and produce diarrhea.

The four chief indications for the physician to meet are: congestion, excess of fever, feebleness of heart, and adynamia.

In severe cases the congestion is the great cause of danger. Gendre does not believe in the application of vesication or other forms of counter-irritation to the area affected under these circumstances; on the contrary, he believes that cold applied to the chest by means of the ice-bag is a very much more efficient means of treatment.

For the excess of temperature, hydrotherapeutic measures are to be preferred to antithermic drugs, such as antipyrin, which decrease the urinary secretion and tend to provoke excessive sweating. He does not find that quinine materially influences the temperature in cases of broncho-pneumonia, except in those cases which are attacked by the disease in the course of epidemic influenza or typhoid fever. He believes that acetanilid is dangerous, phenacetin inactive, and that aconite, which many physicians employ for the purpose of combating the fever, is contra-indicated, because, although it quiets the pulse and allays nervous irritation, it depresses the vital forces, and, more than all, by acting as a sedative it prevents the cough which is necessary for the expectoration of bronchial secretion.

For the feebleness of the heart, caffeine is the remedy of choice. Its advantages are: rapidity of action, and the possibility of its use by hypodermic injection if necessary. But on the other hand it frequently produces some cerebral excitement and may cause insomnia. In other instances digitalis acts very well, for although its action is slow it is durable. Sparteine and strychnine may be rarely employed as cardiac tonics, if necessary.

If caffeine is employed to combat general feebleness and adynamia, it is best to give it with alcohol in quantities varying with the age of the patient. The alcoholic beverages to be preferred are brandy, champagne, or red wines. If feebleness is very marked, Hoffman's anodyne is of value, and hypodermic injections of camphor oil may be used; tincture of cinnamon may also be given. The hydrotherapeutic measures consist in wrapping the chest in cold compresses, or, if the fever is not reduced by this process, in wrapping the child in a sheet and sprinkling it with tepid water, active friction of the skin being at the same time performed.

The best way of preparing these cold compresses for the chest is to take ordinary tarlatan or gauze, such as is used in surgery, in several thicknesses, and long enough and wide enough to completely envelop the thorax, and wet it with water at the temperature of the room, one-fourth part of alcohol having been added to the water beforehand. The child is rapidly undressed, and the compress wrapped around the chest, covered by a dry compress, and held in position by adhesive strips or by a light bandage. In the course of a quarter of an hour the compress has become heated by its contact with the skin, and it is necessary to employ a fresh one. The compresses, therefore, have to be changed every quarter- to every half-hour, or at least every hour. We must be guided in their use, to a certain extent, by the high fever and nervous excitement. As a rule, the application of these compresses results in a modification of all the symptoms, so that the patient appears to be better in every way.

It is only when severe symptoms of excessive fever, marked dyspnea, and great nervous irritability are present, that the cold bath is to be resorted to, and even then the temperature of the water should not be below that of the ordinary living-room. Should a large portion of the lung be involved in the

child, baths nearly always do harm, as reaction frequently does not occur and collapse ensues. Gendre believes that a feeble or irregular action of the heart forms an absolute contra-indication to the use of the bath. Constant attention should be paid to the question of diet all through the illness, as the chances of recovery depend to a great extent upon the ability of the patients to preserve their vital resistance and nutrition.

THE TREATMENT OF THE THIRD STAGE OF LABOR.

The following summary of this subject is given in the *Journal de Médecine de Paris* of February 9, 1896: The character of the treatment may be summed up under the head of various drugs that are employed, namely: anesthetics, hemostatics, styptics, disinfectants, and stimulants.

The object of the anesthetics is to overcome pain, and if necessary to delay labor if the uterine contractions are too active and the birth canal not sufficiently dilated. Under these circumstances chloroform is perhaps the best drug to employ. For the overcoming of the tendency to rigidity of the mouth of the uterus, the method of Playfair—namely, chloral in full doses—is to be carried out. Chloroform should not be given in sufficient quantity to produce complete surgical anesthesia, and during its administration careful attention to the patient is required. Should the contractions of the uterus become feeble during its use, it must be discontinued. Sometimes a mixture of alcohol and chloroform, one part of the former to two of the latter, may be employed with advantage as an inhalant. The contra-indications to the use of the anesthetic in labor are: anemia, goitre, myocarditis, dyspnea and collapse, severe disease of the heart, and placenta prævia.

As a hemostatic, by far the best remedy is the fluid extract of ergot, which should be administered just after the child is born and after the placenta is ready to be discharged. Care should be taken that clots are not retained in the uterus after its administration. If hemorrhage becomes active, ergotin may be given hypodermically. Sometimes, if the second stage of labor is slow in coming to a close, small doses of extract of ergot, say ten drops, with digitalis and quinine, may be given to increase the uterine contractions, but this should not be repeated. Should the hemorrhage be a slow oozing one, which is persistent, injections of the perchloride of iron may be given, but as a general rule it is best to curette the uterus to relieve it of any particles of placenta which may be adherent to it, and this is usually sufficient to check the hemorrhage.

In the way of disinfectants we should remember that absolute cleanliness is better than the use of disinfectant drugs, but should there be any reason to believe that the lying-in woman is infected with gonorrhea or leucorrhea a sublimate injection should be employed, not only before but after parturition, the strength of it being about 1 to 5000 of water.

CHLOROFORM MIXTURE FOR BILIOUS HEMOGLOBINURIA.

The *Journal de Médecine de Paris* of February 23, 1896, recommends the following prescription for this purpose:

℞ Chloroform, 1 drachm;
Powdered gum arabic, a sufficient quantity;
Simple syrup, 8 ounces.

A dessertspoonful of this mixture may be taken every ten minutes, but the mixture should be well shaken each time before taking.

THE VALUE OF CALOMEL INJECTIONS IN SYPHILIS.

At a recent meeting of the Paris Society of Dermatologists, PORTALIER reported the results he had obtained from the hypodermic injection of calomel in the treatment of syphilis. The mixture was composed as follows:

℞ Powdered calomel, 1 grain;
Powdered cocaine, ⅙ grain;
Olive oil, 15 drops.

After the injection was given, he frequently noticed some redness and heat in the skin, but this disappeared after seven or eight days. The pain was variable, but in no case was its intensity extreme. In several cases, however, slight fever, salivation and diarrhea were noted. In four cases out of four hundred patients, abscesses occurred. The injections were given four or five in a series, generally extending over a period of eight days, and separated from the next series by an interval of not less than five weeks.

The author believes the treatment is not suitable to every case of syphilis, but is indicated in malignant cases which need very active medication, or where the alimentary canal will not tolerate the internal administration of the drug.

FOURNIER is quoted as asserting that calo-

mel is indicated in this form in the following conditions: first, in phagedenic chancre of the tongue; second, in early malignant syphilis; third, in tertiary glossitis; fourth, in grave laryngeal syphilis. On the contrary, calomel by hypodermic injection is contra-indicated in cutaneous syphilis, in mucous patches, and in cases of adenitis.

ABADIE, who is a firm believer in the treatment of syphilis by hypodermic injections, recommends the following formula:

℞ Cyanide of mercury, 2 grains;
Hydrochlorate of cocaine, 1 grain;
Distilled water, 2 ounces.

Half a hypodermic syringeful of this solution may be injected deeply into the subcutaneous tissues of the back or buttock, and the injection repeated in two days. Abadie believes that in syphilitic ocular disease this treatment is particularly valuable, and even suggests that it be employed by intra-venous methods.—*Journal des Praticiens*, March 7, 1896.

TREATMENT OF SOFT CHANCRE.

The treatment of soft chancre consists in the destruction of the ulcerated area by means of curetting and caustics, and as far as possible transforming the specific ulcer into a simple one. For the purpose of diminishing the virulence of the sore and aiding in cicatrization, BALZER recommends: first, that hot baths or hot moist applications shall be employed, if possible twice a day or more, and where only local applications are employed that a one-per-cent. solution of carbolic acid shall be used as a lotion. For purposes of cauterization every two days it is well to use the following prescription with a small tampon:

℞ Chloride of zinc,
Oxide of zinc, of each, 15 grains;
Distilled water, enough to make a paste.

This is retained during several hours, and forms a small white eschar. In other cases carbolic acid dissolved in alcohol in the proportion of ten per cent., or nitrate of silver in twenty-per-cent. solution, may be used. Among the innumerable preparations which have been named as more permanent dressings may be mentioned iodoform, aristol, salol, and camphorated naphthol.

In the way of general treatment, Balzer insists upon the importance of preventing phagedenic spread of the disease, and believes that mercurials are of very distinct advantage.—*Journal des Praticiens*, March 14, 1896.

TREATMENT OF ERYSIPELAS BY CARBOLIC ACID.

According to the *Journal de Médecine de Paris* of February 23, 1896, subcutaneous injections and local applications of carbolic acid are exceedingly useful in the treatment of erysipelas; and while the injections are painful, they do not produce evidences of intoxication. The acid is introduced at a distance of half an inch to an inch from the erysipelatous border, and at intervals of 1½ inches. The liquid should be pushed out of the syringe very slowly, and after it is injected into the subcutaneous tissues an ointment should be applied over the surface. It is stated that from four to five drops of the pure acid may be used at each injection distributed in the area named, and it is also claimed that the fever falls and the redness disappears in from twelve to twenty-four hours afterwards.

In other instances, where it is not considered wise to use these injections, compresses wet with carbolized water or with carbolized oil in the strength of ten per cent. may be used. It is said that Hayem employs a solution of carbolic acid and alcohol in equal parts, for application to the part affected; this is said not to produce pain, but if the acid is used in great excess it may cause persistent cicatricial contraction of the skin.

THE TREATMENT OF ACUTE GOUT.

In the *Journal des Praticiens* of February 1, 1896, the following directions of OTTINGER are given: In all cases of gout much attention must be given, in the way of treatment, to the condition of the heart and kidneys. When the attack is present, every effort must be made to relieve the pain and the heat in the part affected, and for this purpose it is well to administer not only diluents but small doses of the benzoate of sodium in hot aromatic infusion. If the attack is very severe, with complete insomnia, and the patient vigorous and without visceral disorders, we not only require that he shall remain in bed and rely entirely upon a milk diet, but we add to the milk some one of the alkaline mineral waters. In the way of medication, moderate doses of salicylate of sodium may be given to young persons, and local applications of solutions of the salicylates made about the inflamed part. The wine of colchicum may be given in the dose of twenty to forty drops, and, in case colchicum is contra-indicated because of irritation of the alimentary canal,

and salicylates cannot be used for similar reasons, antipyrin is to be employed as a valuable remedy. It should be prescribed as follows:

℞ Antipyrin, 2 drachms;
Bicarbonate of sodium, 1 drachm.

Make into twelve powders; administer one three times a day.

For the relief of the pain, a number of liniments can be employed—*e.g.*:

℞ Tincture hyoscyamus,
Tincture belladonna,
Tincture opium, of each, 2 drachms;
Olive oil, 4 ounces.

Or,

℞ Sulphate of atropine, ½ grain;
Hydrochlorate of morphine, 5 grains;
Oleic acid, 1 ounce.

To be painted over the part.

THYROID TREATMENT OF ACROMEGALY.

BRUNS (*Neurol. Centralbl.*, December, 1895) reports a case of acromegaly treated by thyroid. The patient, a woman, aged twenty-four, after an abortion in her first pregnancy, experienced vague pains and forms of paresthesia in the hands and feet, which were noticed to become gradually enlarged. Two years later she presented a typical picture of acromegaly, with enlargement of bones and soft parts of face; marked thickening of bones of trunk, especially the clavicles; hands and feet enormously enlarged; patient extremely nervous and excitable, sleeping very badly; suffering from almost constant headache; vague pains and abnormal sensations in extremities, preventing her from doing any fine work. Tabloids of thyroid extract (quantity unknown) were given in increasing doses until four were taken per diem. The enlargement of parts persisted, but the improvement in subjective symptoms was striking; the nervous excitability rapidly diminished, the patient slept well, and the headache disappeared; the pains in the extremities also vanished, and the patient was able to resume the finest work.—*British Medical Journal*, Jan. 18, 1896.

THE USE OF THE ICE-BAG IN CASES OF HEART DISEASE DUE TO INFECTION.

GENDRE, in an original article in the *Journal de Médecine de Paris* of December 15, 1895, concludes a paper upon this topic, in which he recommends the application of an ice-bag to the præcordium in the cardiac complications of the several acute infectious diseases. He states that an ice-bag or small bladder containing cracked ice in small quantity should be applied, care being exercised that too much pressure is not produced. The ice-bag should be separated from the skin by one or two layers of flannel; without this precaution cutaneous erythema will soon develop, and if the cold application is continued for a number of hours a superficial slough of the skin will occur. The patient should lie quietly upon his back, so as to avoid the necessity of fixing the bag against his chest; should he be restless, it must be applied by means of a bandage. Ordinarily the application should not be kept up for longer than three days.

The effects which the author finds produced by the application of the ice-bag in functional troubles of the heart—as for example those which are symptomatic of pericarditis, acute endocarditis, or the hyperpyrexia associated with any acute infection—are exceedingly interesting. In the first place, there is marked amelioration or disappearance of all painful symptoms. As a general rule the patient finds at once that the application is comfortable and desires its further employment, and palpitation of the heart which may have been exceedingly marked is greatly improved. Thus it is frequent to find that the pulse on the first day will be 140 to 150; on the second, 120; on the third, 100; and on the fourth day of the application it may be only 80; the pulse is more forcible and no longer filiform and undulating, and any excess in cardiac action is quieted. The heart's action is more regular and its contractions are more energetic. The *bruit de galop*, or the reduplication of the heart-sounds with intermittence, usually disappears. Indeed, the effect of applying ice to the præcordium is, in the experience of Gendre, precisely analogous to the results of administering digitalis when this drug acts as a cardiac tonic. Not only does it produce a favorable influence upon these functional disturbances, but it also tends to relieve the inflammation of the pericardium or even of the heart-muscle itself. After quoting several cases, the author gives as an example a case of endocarditis complicating acute rheumatism and associated with congestion of the left lung, the patient being a young girl.

In the discussion which followed Gendre's paper, JULLIEN, after congratulating his colleague upon the good results which he had obtained, called attention to papers by Silva and

Grigorovitch, published as long ago as 1886, and one by Israel in 1894, in which interesting studies were made as to this method of treatment. Thus Silva, by means of the thermo-electric apparatus, tested the influence of cold applied to the anterior surface of the chest upon the heart, and found also by measuring the intra-vascular pressure that the change in the action of the heart was very great through the influence of the cold. He also stated that cold applications to the pericardium had been found of value in the cardiac irregularity of chlorosis, of nephritis, and of mitral stenosis or lack of compensation.

EUROPHEN IN VENEREAL DISEASES.

KOPP (*Aerztl. Centr. Anz.*, Sept. 20, 1895) has employed this remedy in nineteen cases of soft sore, nine of inguinal bubo, and seven of mucous tubercles in the genito-crural and anal regions. Previous investigators having found it useless in gonorrhea, it was not again tried in this complaint. In five of the cases of soft sore the ulcer was scraped out, under local ether anesthesia, the bleeding stopped by sublimate compresses, and the surface then thickly powdered with europhen one part, boric acid three parts. This formed a crust which did not separate, but was dusted with the powder twice daily. The ulcers healed under this crust in six to eleven days. The remaining fourteen cases were cleansed with 1: 1000 sublimate, aud then treated with europhen, pure or mixed with boric-acid powder (for economy) in varying proportions, the weakest being 1:6. The average time required for healing was seventeen days—about the same as with iodoform. No instant effects were observed in any case, but the remedy did not prevent the formation of buboes. Europhen was also found very useful in two buboes which had burst and become converted by infection into large venereal ulcers; these healed in twenty days under the use of europhen, 1:3, with boric acid. A similar mixture, of the strength of 1:6, was employed with success in the treatment of seven other simple buboes after scraping. Europhen-boric powder 1:4 aided the healing of mucous tubercles, the patient being under mercurial treatment. The condylomata skinned over in three to ten days.

Kopp considers that europhen is less irritating than any other odorless antiseptic powder; that it is specially indicated in the treatment of venereal ulcers after scraping; and that it is useful, but not irreplaceable, in the treatment of other specific and non-specific ulcerations.—*British Medical Journal*, Jan. 18, 1896.

THE TREATMENT OF DIABETIC COMA.

The *Journal des Praticiens* of February 22, 1896, first gives us the various theories as to the causation of this condition, and then speaks of its treatment. The first theory is that the condition is due to intoxication of the blood by acetone; the second, that there is a poisoning of the blood by fatty acids; the third, that there is a condition in which dehydration of the nerve centres ensues, owing to the excess of glucose in the blood; the fourth, that fat emboli produce the symptoms; the fifth, that there is a lesion in the renal epithelium; the sixth, that there is a fatty degeneration of the blood-vessels with cardiac failure as the result of myocarditis.

The clinical types of diabetic coma are quite various. In certain instances there is a feebleness of the heart resembling in many cases myocarditis. Then, again, there is severe dyspnea and Cheyne-Stokes breathing similar to that seen in uremia In other instances there are peritoneal symptoms, and in still others, though rarely, active diarrhea.

Amongst the nervous complications we may have mania, convulsions, severe vertigo, and subnormal temperature, all of these symptoms preceding the coma. In other words, the symptoms may be connected with lesions in the heart, in the gastro-intestinal tract, in the medulla, or in the brain, and they all require, to some extent at least, a different form of medication. If the patient is young and vigorous, anti-diabetic diet consisting solely of meat and of as little drink as possible, with opium, belladonna and antipyrin in full doses, is to be resorted to and continued for a long time. Excessive fatigue is to be avoided, as is also exposure to cold. For the premonitory symptoms of the coma, active purgation may be employed for the purpose of eliminating the toxic material; indeed, the diarrhea which accompanies the gastro-intestinal types of diabetic poisoning is an effort of nature in this direction. The most satisfactory purgative to employ is an ounce of the sulphate of sodium. For the purpose of increasing the action of the skin, cutaneous frictions are to be employed, and inhalations of oxygen are to be used. For the cardiac collapse, ether and caffeine are the best stimulants; they may be given with camphorated oil. Intra-venous or subcu-

taneous transfusion of the following solution may be resorted to:

Sterilized water, 1 quart;
Chloride of sodium, 45 grains;
Bicarbonate of sodium, 1 ounce.

According to the *Revue Internationale de Médecine et de Chirurgie* of March 10, 1896, CASSOUTE recommends, as an assistance to the kidneys, digitalis in small doses, particularly if the heart is feeble, and active purgatives every few days. Inhalations of oxygen will relieve the dyspnea and perhaps have a tendency to counteract the evil effects of the intoxication. Should the patient not be distinctly ill, but simply have loss of appetite and general wretchedness, it is useful to give bitter tonics such as calumbo, nux vomica, and cinchona, and diuretic wines, which of course must contain no sugar. Should constipation be present, one of the purgative waters, such as Carlsbad or Friedreichschall, should be used, or in other instances a dose of castor oil given every two or three days does equally well. For the depression, stupor and drowsiness from which the patient sometimes suffers, he recommends that small doses of the bromides, antipyrin or opium be given—rather, we presume, for their anti-diabetic influence than from any expectation that they will overcome the symptoms directly.

So far as the treatment of the coma itself is concerned, we must confess that our therapeutic methods are of comparatively little value. General stimulation may be resorted to by injections of ether or caffeine and by the use of full doses of acetate of ammonium by the mouth. For the purpose of increasing diuresis and to prevent toxemia, the method of Hilton Fagge and Küssmaul, of saline transfusion or of blood-serum transfusion, has been resorted to without success. On the other hand, Cassoute thinks well of hypodermoclysis for the purpose of washing the organism and increasing urinary flow. Under these circumstances a solution of pure common salt in the strength of 1 to 1000 is to be given by means of a fountain syringe attached to a hypodermic needle. From half a pint to a pint of liquid may be given under the skin in this way every half-hour. On the ground, too, that the symptoms of acetonemia result from a decrease in the alkalinity of the blood and the poisoning by acids which are formed through the incomplete oxidation of glucose, it has been advised that full doses of alkalies should be given, and in case there is difficulty in administering them by the stomach, intra-venous alkaline injections may be used according to the method of Stadelman, who first practiced the injection of a 7: 1000 solution of chloride of sodium to which he added a thirty-per-cent. solution of bicarbonate of sodium. Attention is called to the fact that Minkowsky and Dickinson have followed Stadelman's method, but with little success. Lépine says we should use a solution consisting of two drachms of chloride of sodium and 544 grains of bicarbonate of sodium to 1½ pints of sterilized water. While theoretically this administration of alkalies is advisable, unfortunately practical experience has not shown that it does very much good, but it is to be tried with the hope of its being of some value, as nothing else offers more encouragement.

TREATMENT OF HYSTERICAL MUTISM BY ETHERIZATION.

GIOFFREDI (*Gazzetta degli Ospitali*, Oct. 1, 1895), on the assumption that hysterical mutism is due to an exalted condition of the inhibitory powers of the brain over the speech centres—an idea suggested by the fact that certain hysterical mutes were noticed to speak during sleep,—was led to believe that an agent (for example, anesthetics) which paralyzed this power would prove a cure for the disease. Ether was the anesthetic selected, and it proved eminently satisfactory in the two cases in which the author tried it. These were young women with marked hysterical symptoms (anuria, anesthesia, vomiting, contracted visual field, etc.), suffering from mutism, which resisted treatment by galvanism, suggestion, massage, drugs, etc. Before anesthetizing the patient no mention was made of the object of the treatment, so as to avoid any suspicion of suggestion. In each case, as soon as the stage of excitement began, the patient spoke. Etherization was then discontinued, and the patient aroused by mechanical and other means. In the first case the mutism, which was completely cured by the anesthetic, returned nine months after, and was again cured by the administration of ether. In the second case, cure took place with one administration, and no return has occurred.—*British Medical Journal*, Jan. 18, 1896.

TREATMENT OF REBELLIOUS HEADACHE BY CALOMEL.

At a meeting of the Paris Academy of Medicine on February 26, 1896, GALLIARD

spoke of a certain class of cases which suffer from perpetual headache—a headache which can be readily confounded with true migraine, as there are paroxysmal exacerbations, although there is no vomiting or nausea. The headache is generally localized in the frontal region, rarely in the temples, vertex, or occiput. The trouble possesses none of the characteristics of syphilitic headache. It is more frequently found in women than in men, and is generally associated with neurasthenia. Galliard finds that if he gives to the adult, suffering from this headache, six doses of calomel, of two grains each, for six days, the first one being given early in the morning, distinct benefit results. Care must be taken that a mercurial stomatitis is not produced, and to this end a mouth-wash must be employed and cleanliness of the mouth must be insisted upon. Very often after the third or fourth day there may be some griping and diarrhea, in which case the patient must rest in bed. The diet, of course, should be carefully regulated with the idea of decreasing the tendency to diarrhea. Should complete cure not result from this means of treatment, it may be repeated after several weeks' interval, but if the second attempt fails it is useless to carry the treatment any further.—*Journal des Praticiens*, Feb. 29, 1896.

A REPORT OF TWO YEARS' WORK AT THE PRESTON RETREAT.

NORRIS tells us that the technique followed at the Preston Retreat (an institution for lying-in women) to prevent puerperal sepsis does not materially differ from that followed in other similar institutions, and is briefly as follows: The women awaiting delivery never come in contact with the lying in patients. Two baths a week, daily purgation, and a wholesome diet, are the rules of the house. At the approach of labor the patient is given a full bath, with generous use of soap and brush, and receives a 1:2000 sublimated vaginal douche, and thorough douching of the vulva, lower abdomen, and inner surface of thighs. Vaginal examinations are as few as the case will permit, but manipulation to favor the mechanism of labor—for example, assistance to favor rotation in posterior positions or to correct faulty position—is not neglected. In ordinary cases one examination suffices. Diagnosis by abdominal palpation is highly valued and constantly practiced. Personal disinfection is rigid. For nail-cleaning, a nail-brush and abundance of soap and hot water repeatedly changed, a 1:1000 bichloride solution, and in addition, for operative cases, alcohol and a sterilized nail-brush, are employed. A lubricant is not used. A large, freshly laundered gown covers the attendant's clothing. Prompt delivery of the placenta after a single dose of ergot; a post-partum sublimate douche (1:2000) and antiseptic occlusive pads are employed in every case. Vaginal and perineal lacerations are always immediately repaired with silk-worm-gut sutures, and needles and needle-holder sterilized by boiling. Throughout the first ten days of the puerperium the antiseptic occlusive dressings are very frequently and extravagantly changed, the external genitalia being carefully cleansed with the bichloride solution when each pad is renewed. Vaginal douches in the puerperium are given on alternate days only when lacerations have required extensive repair. A two-per cent. solution of creolin is used for intra-uterine or vaginal douches in the very rare cases that require douches in the puerperium. The nurses have cleanliness and antisepsis forced upon them at every point. The building is well ventilated, and the wards are used in rotation. Each lying-in ward is thoroughly cleansed after ten days' or two weeks' occupancy, and for the same period the ward is vacated, the windows being widely opened in winter and summer throughout this period. There are two delivery rooms, which also are used in rotation. The hospital furniture in the delivery rooms and in the wards is made of iron and of glass, and can readily be kept clean. A glass percolator and a glass nozzle are used for the douche. All instruments are sterilized by boiling in water.—*American Gynæcological and Obstetrical Journal*, February, 1896.

A LAXATIVE POWDER FOR CONSTIPATION IN CHILDREN.

℞ Bicarbonate of sodium, 3 drachms;
Powdered rhubarb, 2 ounces;
Sulphate of sodium, 1 ounce;
Oil of peppermint, 20 drops.

Half to one teaspoonful of this powder may be given in the morning before breakfast.—*Journal de Médecine de Paris*, March 8, 1896.

FOREIGN BODIES IN THE AUDITORY MEATUS.

MILLIGAN writes in the *Manchester Medical Chronicle* for March, 1896, in regard to the removal of foreign bodies from the ear,

that in every case it is most essential a properly conducted examination, under good illumination, be made, otherwise serious mistakes and deplorable consequences may ensue. The statements made by the patient must never be taken as accurate, unless confirmed by a careful examination with mirror and speculum. In the vast majority of cases the foreign body, if present at all, will be found in the cartilaginous portion of the meatus, and so long as it remains in this situation its removal is usually accomplished with comparative ease; when, on the other hand, the foreign body has passed into the bony portion of the meatus, either during its first introduction or subsequently during attempts at its removal, the difficulties of successful extraction will be found greatly increased. In all cases attempts should first be made to remove the foreign body by means of a syringe. For this purpose a syringe holding from three to four fluidounces, and with a fine tapering nozzle, will usually be sufficient. If previous examination has demonstrated that a small chink exists between the foreign body and any one of the meatal walls, the stream of fluid should be made to pass along that particular wall and so past the foreign body. During the process of syringing, the auricle should be held well upwards and backwards (in children downwards and backwards). Should syringing fail to dislodge the foreign body, recourse may be had to instruments, but it must always be borne in mind that unless inflammatory symptoms and symptoms of cerebral irritation be present, there is no special haste required in removing the foreign body. Foreign bodies may, and frequently do, remain in the ear for months, and even years, without producing any symptoms at all.

It has been suggested that if the foreign body be of such a nature as to absorb water, syringing should be conducted with glycerin or oil. A plan which is at times useful and successful is the "glue method," devised by Löwenberg of Paris. A small camel-hair brush is taken, dipped in a strong solution of glue, and then applied, under illumination, to the presenting surface of the foreign body. When the glue has set, gentle traction is made, with the result, in some cases at least, that the foreign body is drawn out. Hooks, scoops, forceps, curved probes, wire snares, etc., are all used, should syringing prove ineffectual. The particular instrument must be gently pressed behind the foreign body, great care being taken that it does not push the latter farther into the meatus, and then gentle traction exercised. During all such manipulations, whatever may be the particular instrument employed, the greatest care must be taken to work under proper illumination and with gentleness. The writer has so frequently been consulted in cases where attempts to remove foreign bodies have been made, and where the body has been pushed through the membrana tympani, that, at the risk of repetition, he would again endorse three cardinal maxims: (1) Be sure that a foreign body really exists in the meatus; (2) If present, make a careful attempt to remove it with the syringe; (3) If instruments have to be resorted to, be careful that the work is done under proper illumination and with the utmost gentleness. In many cases the ingenuity of the surgeon will be taxed as to which is the best instrument to employ for extraction. In a case once seen, where the top of a "mother-of-pearl" collar stud had found its way into the external meatus, all instruments failed to catch or to grasp it, and it was only removed after a small basket of wire had been constructed around it.

Where inflammatory symptoms are present, but no danger is anticipated by temporary delay, the surgeon should wait until their subsidence has been accomplished. This may be effected by the use of ice-bags around the meatus, the local application of leeches, or the instillation of warm astringent solutions. Should, however, urgent symptoms of extension of inflammation or of cerebral irritation be present, the surgeon should at once detach the auricle by means of a curved incision and then extract the foreign body by means of instruments.

In the case of animate foreign bodies, such as flies, bugs, earwigs, etc., syringing with plain warm water is usually all that is required. If, however, the animal should have attached itself to the meatal walls, the vapor of chloroform or the smoke from a tobacco-pipe will, as a rule, cause its detachment, when syringing will at once effect its dislodgment. If not, it may be removed with a pair of fine forceps.

CARE OF PREGNANT WOMEN.

PINARD (*Gazette des Hôpitaux*, Nov. 28, 1895) finds that it is very important that women should be kept at rest toward the end of pregnancy. Hard work is an evil both for the existing citizen (the mother) and the future citizen (the child). He has

compared the cases of women who seek relief at a lying-in hospital, usually after the first pain at least has come on, with the cases of women carefully nursed in a refuge for the pregnant. The average weight of the children born in the hospital was 3010 grammes; that of the children born after the mothers had been at least ten days in a refuge was 3290 grammes. A maximum average of 3366 grammes was reached in cases where the mother had resided for some time in the wards of the Baudelocque Lying-in Hospital; but Pinard notes that there were more primiparæ in the refuge, and more multiparæ, relatively better off, or at least not in distress, in the hospital. Preliminary rest was found to have a particularly good influence on the duration of labor. Out of 1000 women who worked till labor began, 482 only were delivered on or after the 280th day of gestation. On the other hand, 660 of the women who had rested were delivered at or after the same date.—*British Medical Journal*, Jan. 18, 1896.

THE TREATMENT OF THE PAIN IN NEPHRITIC COLIC.

In this condition, in which the pain is often atrocious and perhaps associated with persistent anuria, with danger of uremia, the *Journal des Praticiens* of January 11, 1896, recommends the following treatment: In the first place a poultice containing a large amount of laudanum is placed upon the lumbar region or upon the anterior abdominal walls. The heat not only acts as an anti-spasmodic and thereby modifies the spasmodic contractions of the ureters, but also in this way favors the escape of the stone. Full doses of the extract of opium or morphine should be given, and should the stomach be too irritable to retain it the extract of opium or laudanum may be given by rectal injection. The great difficulty in using hypodermic injections of morphine in these cases is that the patient gets into the habit of handling the syringe himself. As a rule it is wise not to use any more morphine than is absolutely necessary to make the pain bearable. In some instances the following suppository is useful:

℞ Extract of belladonna, ½ grain;
Extract of opium, ½ grain;
Cacao butter, 45 grains.

In other instances it has been found that the administration of antipyrin by the mouth or by hypodermic injections is useful, although hypodermic injections of this drug are exceedingly painful for the first few minutes. It is thought by some that the antipyrin also aids in the elimination of uric acid. If hypodermic injections are used, the following formula may be employed:

℞ Antipyrin, 40 grains;
Water, 3 drachms.

A hypodermic syringeful of this solution to be given at a dose.

In other instances chloral by rectal injection tends not only to produce nervous quiet, but also to permit sleep. The following formula may be used:

℞ Chloral, 30 grains;
Wine of opium, 10 drops;
Decoction of marshmallow, 4 ounces.

This injection should be warm. The advantage in adding the opiate is a double one in that it relieves pain and tends to cause the retention of the injection until the chloral can be absorbed.

If the pain is very severe, chloroform or ether may be used until the development of an anesthesia equivalent to that produced ordinarily during parturition, or, in other words, until enough is given to relieve the acme of the paroxysm. Sometimes a general hot bath is of value in relaxing the local spasm and producing general relaxation.

CHARCOAL AS A THERAPEUTIC AGENT.

The Manchester (Eng.) correspondent of the THERAPEUTIC GAZETTE, Dr. WILD, has recently been awarded the Parkins Prize of the Royal College of Physicians of Edinburgh, for an essay on this topic.

He concludes that externally, as a local application to foul ulcers, or mixed with water for an injection into the rectum or vagina in cancer or other ulcerative disease of those cavities, charcoal is useful. In certain cases much benefit has resulted from its use, especially with respect to diminishing the smell which so often renders this class of patients difficult to treat, either in a hospital ward or in a small room. It is, however, a very dirty application if used in sufficient quantity, and for ordinary cases our present antiseptic drugs are more cleanly and more effectual, and are not likely to be superseded by charcoal.

Internally it is of value in cases where there is undue decomposition of the contents of the alimentary canal, such as dilatation of the stomach, certain forms of gastric indigestion, intestinal indigestion, and other conditions where the alimentary canal contains abnormal toxic substances, and in certain

specific diseases presenting local lesions of the alimentary canal. We know that many of these, such as cholera, typhoid fever, dysentery, and certain forms of diarrhea, are due to living organisms, and of recent years the view is more and more gaining ground that many of the symptoms in these cases are due not so much to the living organisms as to the formation of various toxic substances (*e. g.*, the typho-toxin of Brieger and Fraenkel), which exert an injurious action upon the alimentary canal, or by their absorption from it produce a more general intoxication.

For the treatment of these diseases the use of intestinal antiseptics is increasing, and good results have been frequently reported, though, on the other hand, only small doses of the antiseptic drugs can be safely administered in this manner, and it is difficult to insure their arrival at the particular part of the alimentary canal where they are needed.

Charcoal appears worthy of further trial in these classes of cases, for, although devoid of antiseptic properties, it may act by oxidizing the chemical substances formed during abnormal decomposition or the various toxins produced by pathogenic organisms. This action may be a direct one, or indirectly through the aërobic process of putrefaction, and it is possible that a supply of oxygen may modify the metabolic processes of the pathogenic organisms themselves and render them or their products less virulent. The power of charcoal to remove alkaloids from solution is also worth considering, as certain toxins and ptomaines are possibly of an alkaloidal nature. Charcoal may not be a direct curative agent in cases where it is of service; it may, however, prevent auto-intoxication from the alimentary canal, and so prevent serious symptoms and enable the tissues of the organism to cope successfully with a disease that would otherwise prove fatal.

It may also be borne in mind that, as suggested by Dr. Lauder Brunton, the mechanical effect of charcoal may have some additional value either as a laxative or in removing mucus from the walls of the alimentary canal.

Charcoal, being non-poisonous, can be given in large doses; from two to six teaspoonfuls a day, gradually increased, is the quantity usually recommended. Dr. Belloc himself took 500 grammes (over a pound) in one day without bad effects. It can, at any rate, do no harm; the only evil result recorded is the rare formation of a mass causing obstruction of the alimentary canal; this can be avoided by mixing it with a sufficient quantity of water before administration.

Some patients object to taking charcoal, though it is tasteless, and it has been prescribed under other names; for example, "magnesie noir" is not unfrequently used in France, and the corresponding name of "black magnesia" is sometimes heard in England.

Many of the older writers are very particular as to the variety of charcoal used for medical purposes. That this may really be an important factor is shown by the experiments upon the absorption of gases by charcoal, above mentioned. It was found that charcoal obtained from some kinds of wood absorbed much larger volumes of gas than that obtained from other woods. Dr. Belloc is very emphatic as to the superiority of poplar charcoal, prepared in a particular manner, and the commission of the French Academy confirm his statement and go on to say that, after careful examination and analysis, "the charcoal of Dr. Belloc did not seem to differ from other charcoals except in its extreme porosity."

The object of this research, commenced at the suggestion of Professor Leech, over four years ago, and carried out in the Pharmacological Laboratory of the Owens College, was to ascertain, if possible, whether there were any pharmacological grounds for the therapeutic use of charcoal.

THE USE OF BISMUTH AND CALUMBO IN THE TREATMENT OF ACUTE DIARRHEA IN INFANTS.

According to the *Journal de Médecine de Paris* of March 8, 1896, the following formula is useful for this purpose:

℞ Calumbo root, 15 grains;
Boiling water, 3 ounces.

Strain, and add:

Subnitrate of bismuth, 45 grains;
Syrup of orange flowers, ½ ounce.

Of this a small teaspoonful is to be given every two hours, the bottle being shaken before each dose. Under the influence of this treatment, it is asserted, the vomiting ceases after the first or second dose and the diarrhea disappears in the course of twenty-four hours.

THE TREATMENT OF COLLAPSE FOLLOWING OPERATIONS OR INJURIES.

FORGUE recommends that after long operations, accompanied by hemorrhages or by attacks of reflex syncope, or after severe in-

juries with much shock and loss of blood, the patient being in an exceedingly feeble condition, with a pale face and cold sweat, dilated pupils, cold extremities, a filiform pulse, and irregular shallow respirations, he should be put in such position that the head is lower than the rest of the body, and hot bottles or bricks placed about him in bed. Active rubbing should also be resorted to, and hypodermic injections of ether and caffeine are of value. Often it is of benefit to administer champagne or brandy by rectal injection. For the purpose of stimulating the heart, a momentary whiff of nitrite of amyl is of value, and the respirations may be stimulated by slapping the face with a wet towel, by Laborde's rhythmic tractions on the tongue, by inhalations of oxygen, and by resorting to Sylvester's method of artificial respiration. Should collapse be due to hemorrhage, the transfusion of artificial serum or normal saline solution is exceedingly valuable and has practically supplanted the older methods of blood-transfusion.—*Journal des Praticiens*, Jan. 18, 1896.

HYPODERMIC INJECTIONS OF FOWLER'S SOLUTION IN ANEMIA.

After pointing out that in grave anemias the difficulties of treatment are very great, the *Journal des Praticiens* of January 18, 1896, recalls the fact that Hayem in his book upon the Blood in 1889 recommended the hypodermic injection of arsenical preparations in those cases where irritability of the stomach prevented its administration by the mouth. The best means of administering Fowler's solution is in cherry-laurel water in the dose of ten drops, as much as twenty drops being sometimes given in a day. In a recent summary of this subject, Kernig reports thirty-five cases of severe anemia due to various causes, such as pernicious anemia, anemia after typhoid fever, round ulcer, cancer, tuberculosis, and that due to tape-worm, in all of which he employed a solution composed of two parts water and one part Fowler's solution. Of this mixture, an ordinary hypodermic syringeful was given daily. In all instances Kernig found marked improvement in the anemia.

THE USE OF MENTHOL IN CORYZA.

WUNCHE, of Dresden, has employed inhalations of menthol-chloroform in the strength of five or ten per cent. for the purpose of aborting acute coryza. A few drops of this mixture are placed upon a handkerchief, and five or six deep inspirations are taken. By this means the nasal secretion is augmented at first, but afterwards diminished, and the sore throat and laryngeal symptoms which are frequently found associated with a cold in the head are relieved. The following nasal spray may also be employed after the inhalations are taken:

℞ Ichthyol, 1 part;
Ether and alcohol, of each 1 part;
Distilled water, 97 parts.

—*Journal de Médecine de Paris*, March 1, 1896.

THE DOSAGE OF CALOMEL FOR INFANTS.

For an infant of six months, 1 grain; six months to one year, 2 grains; one year to eighteen months, 2 to 3 grains; eighteen months to two years, 4 grains; two years to five years, 4 to 8 grains.—*Journal de Médecine de Paris*, March 8, 1896.

A PRESCRIPTION FOR MIGRAINE, ASTHMA, OR NERVOUS COLIC.

℞ Pure chloroform,
Alcohol, of each, 2 drachms;
Morphine, 4 grains;
Syrup, 1 ounce;
Water, 4 ounces.
Teaspoonful every half-hour till pain is relieved.

—*Journal des Praticiens*, March 14, 1896.

A PRESCRIPTION FOR DIABETES.

According to the *Journal des Praticiens* of March 14, 1896, the following prescription is highly recommended by ROBIN for diabetes:

℞ Arsenate of sodium, 1-30 grain;
Carbonate of lithium, 2 grains;
Codeine, 1-12 grain;
Dry extract of cinchona, 8 grains.
Make into one cachet. Prepare thirty such.

One of these cachets should be taken after breakfast and one after dinner.

THE LOCAL TREATMENT OF NEURALGIA.

The *Journal de Médecine de Paris* of March 8, 1896, states that SABATTANI uses the following formula, by means of a small pledget of cotton wool which is rubbed upon the neuralgic spot or applied there by means of a bandage for a short time. The treatment may be repeated two or three times in the twenty-four hours:

℞ Menthol,
Guaiacol, of each, 15 grains;
Absolute alcohol, ½ ounce.

PRIMARY CARCINOMA OF BILE-DUCTS.

ROLLESTON (*Medical Chronicle*, January, 1896), in an able paper on this subject, reaches the following conclusions:

Catarrhal jaundice is ushered in usually by vomiting and diarrhea, while the onset of jaundice due to malignant stricture of the bile-duct is quiet and unaccompanied by signs of gastro-intestinal catarrh. But the course of the two is so different, the one passing almost spontaneously away in a few weeks, the other getting progressively worse, that even if at first there be difficulty in determining which is the cause at work, no doubt remains after a few weeks have gone by.

Impacted gall-stone should be indicated by a distinct history of biliary colic immediately preceding the onset of jaundice. But in a patient whose cystic and common bile-ducts are already dilated by the passage of gall-stones, impaction of a calculus may occur, especially near the duodenum, without a patient being able to give a satisfactory history of its occurrence.

In about half the cases of carcinoma of the bile-ducts, calculi are found post-mortem in the gall-bladder, and in a small proportion of these biliary colic had occurred in life. Conversely, pseudo-gallstone colic may possibly occur in cases of malignant disease affecting the bile-ducts without there being any calculi.

If biliary colic immediately precede the development of icterus, the diagnosis is clear, but since impaction of the gall-stones in the common duct may take place without the history being characteristic, it is desirable to consider any further points which bear on the diagnosis of gall-stone obstruction and that due to bile-duct carcinoma. The duration of calculous jaundice is very much longer than that of carcinoma of the bile-ducts, and death, when it occurs, is, as Hilton Fagge points out, due to some complication rather than to cholemia. This difference in the course of the two affections is correlated to a difference in the nature of the obstruction in each case. In malignant disease the obstruction becomes more marked, and absolute as time goes on, whereas exactly the reverse holds good with gall-stone impaction—the obstruction is complete at first, but subsequently, from the constant pressure exerted from within by the calculus on the wall of the bile-duct, and possibly to some extent by an extension of the dilatation of the ducts above the obstruction, the walls become somewhat separated from the calculus, and the obstruction becomes partial or so slight that eventually the jaundice may almost disappear.

The course and duration of the disease, if uninterrupted by surgical treatment, are, then, sufficiently distinct to enable a differential diagnosis to be made; in the earlier stages this may not be possible, but at that time it is not, perhaps, a matter of any great practical importance, as operative interference should be adopted in either case.

Courvoisier, Tuffier and Tessier maintain that in calculous obstruction the gall-bladder is rarely dilated, and generally collapsed, while in other forms of obstruction a distended gall-bladder is the rule. This can hardly be a certain guide, but in a case of doubtful calculous obstruction a dilated gall-bladder might turn the scale in favor of the other alternative.

Primary malignant disease of the gall-bladder is columnar-celled or, less commonly, spheroidal-celled carcinoma, and, in exceptional cases, sarcoma.

So long as the growth remains limited to the gall-bladder and there is no pressure on the hepatic or the common duct, jaundice is absent, and there is little resemblance between this disease and primary carcinoma of the ducts. The jaundice is, therefore, no essential part of the disease, and is due either to extension of the primary growth or to pressure exerted by secondary growths on the bile-ducts. It occurs in the course of more than half the cases; Musser gives its ratio as sixty-nine per cent., which, curiously enough, is also the proportion in which gall-stones were present in his hundred cases of carcinoma of the gall-bladder.

When jaundice due to obstruction of the duct has developed, the case is, for all practical purposes, one of malignant disease both of the gall-bladder and the bile-ducts—a condition less amenable to operative treatment than malignant disease of the common bile-duct. In the latter condition the operation of cholecystenterostomy can be resorted to for the relief of cholemia with a fair prospect of success.

In carcinoma of the gall-bladder there may be a knobby, irregular tumor, not so large as the smooth, dilated gall-bladder met with frequently in carcinoma of the bile-duct or head of the pancreas. In addition to the history, the very frequent association (seventy per cent.) of gall-stones with carcinoma of the gall-bladder should be kept in mind in forming a differential diagnosis.

Primary carcinoma of the head of the pancreas, though it does not so surely compress or obstruct the common bile-duct, almost always produces progressive jaundice; there are, it is true, a few cases in which this is absent, but they are quite the exception. With the jaundice, which may be considered as constant, there is generally, but by no means always, dilatation of the gall-bladder—Bard and Pic laid stress on it, and Herringham found it in considerably more than half the cases he collected; it is present in about half the cases of carcinoma of the bile-ducts, and so does not help the diagnosis. As regards pain, that of pancreatic carcinoma is epigastric, but from concomitant alteration of the bile-ducts it may stray into the hypogastric region. Enlargement of the liver is generally absent in both, and secondary growths in the liver are perhaps more frequently seen in pancreatic cancer. In neither is the primary tumor often palpable. In both cases the cachexia is rapid, perhaps more so in cancer of the pancreas from the likelihood of interference with the flow of the secretion of the gland into the duodenum. In both cases, however, death results from cholemia. A certain amount of variation with regard to the condition of the liver and gall-bladder, and in the site of pain, may occur in both. In short, a diagnosis between the two cannot, on the foregoing grounds, be made with any approach to confidence; and since pancreatic carcinoma is the commoner, it would, on the score of probabilities, be diagnosed whenever their common symptoms are presented. Where carcinoma of the lower end of the bile-duct spreads into the pancreas, it may compress Wirsung's duct as well, and so be practically the same morbid condition as primary carcinoma of the head of the pancreas compressing the bile-duct.

When, however, the bile-duct alone is compressed, the interference with digestion and assimilation should be much less than when both it and the pancreatic duct are obstructed, as generally must occur in pancreatic carcinoma. Attention has been called to solid fat being passed in the motions in cases of obstruction of the pancreatic duct, and to a special alteration of the feces depending on the absence of the pancreatic juice from the intestine. In cases of obstruction of both ducts, the feces sometimes show a great excess of fat over that met with when the bile-duct alone is obstructed; but whether these features are sufficiently constant to be characteristic remains to be proved by more systematic examinations, and is worth investigation.

At present it must be admitted that a certain diagnosis between primary carcinoma of the bile-ducts and of the head of the pancreas cannot be made.

There are numerous causes which may sometimes give rise to chronic jaundice of varying degree, such as secondary hydatid cysts in connection with portal fissure, growths, tumors or hydatid cysts in connection with the liver, inflammatory adhesions or even possibly gummata implicating the ducts, aneurisms of the hepatic artery or of the abdominal aorta—in short, most of the tumors and many of the morbid conditions to be met with in the abdominal cavity. But the question of diagnosis will seldom arise between them and primary malignant disease of the ducts, inasmuch as there will generally be, either in the history or in the physical signs and symptoms, a clue to the nature of the disease.

The treatment of cases thought to be malignant disease of the bile-ducts has usually been confined to relieving symptoms and alleviating pain and distress, and an attempt to prevent putrefactive changes in the intestines by antiseptics and by an appropriate diet. Surgical interference has not been much in vogue, presumably because the disease has been necessarily fatal. But though it cannot be more than palliative, the operation of putting the gall-bladder into communication with the small intestine—cholecystenterostomy—will in favorable cases, *i. e.* where the obstruction is limited to the common bile-duct, prevent the bile being dammed up in the liver and subsequently absorbed by the lymphatics into the general circulation. Jaundice and cholemia with its attendant symptoms may be thus obviated, and the patient's general condition greatly improved. As already mentioned, death results in complete biliary obstruction from cholemia, and if this is prevented life may be greatly prolonged. In a case of biliary obstruction due to what turned out to be malignant disease of the pancreas, Réclus performed cholecystenterostomy with the remarkably successful result that the patient experienced great relief and survived the operation for twenty-one months, eventually dying with numerous secondary growths.

A similar success should follow cholecystenterostomy in cases where the carcinoma is limited to the common bile-duct. The palliative treatment of jaundice from malig-

nant obstruction has been discussed in an interesting paper by Dr. W. Russell, in the Transactions of the Edinburgh Medico-Chirurgical Society, 1894, page 175.

METHOD OF INSERTING THE URETER INTO THE BOWEL.

BOARI, of Ferrara, writes to the *Policlinico*, No. 19, 1895, reviewing all the cases recorded of artificial ureters, and describing his experiments with dogs, and successful operations in two clinical cases. He uses a button similar to the Murphy button, to which is fastened a tube that is introduced and fastened in the ureter. The intestine is opened with a lengthwise slit, through which the button is inserted. The membrane of the intestine and the ureter can be sewed together for security. In one case the operation was performed for tuberculosis of the bladder, and in the other on account of a large vesico-vaginal fistula with destruction of the ureter. The button was evacuated in eight to twelve days.—*Journal of the American Medical Association*, Feb. 15, 1896.

MERCURY OXYCYANIDE AS AN ANTISEPTIC.

According to MONOD and MACAIGNE, laboratory experiments have shown that the antiseptic power of a 1:200 solution of mercury oxycyanide is equal to, if not greater than, that of a 1:1000 solution of corrosive sublimate. From the results obtained in upwards of four years of hospital and private practice, the authors have come to the conclusion that mercury oxycyanide may be advantageously substituted for mercuric chloride in surgical practice. In accord with Tarnier and Vignal, they have found that the 1:200 solution of mercury oxycyanide prevents cultures from developing, kills the microbes already developed by culture, and sterilizes an infected body. To strengthen the evidence, they have been careful not to employ in their experiments pure cultures of streptococci or staphylococci devoid of spores, and consequently presenting but a feeble resistance, but dust from hospital wards, containing various microbes, such as the *Bacillus pyocyanus*, streptococci, the *Bacillus coli communis*, and particularly a microbe resembling the *Bacillus anthracis* and provided with spores which resist a temperature of 212° F. The authors claim to have never met with symptoms of serious intoxication from the solution referred to. It should, however, not be employed for irrigation when there is reason to fear that the injected liquid may be retained. The fact that mercury oxycyanide does not attack steel instruments is also of great practical importance, seeing that it thus becomes possible to employ a single antiseptic agent for all purposes in the course of an operation.—*La Semaine Médicale; Medical Record*, Jan. 4, 1896.

FORMOL IN THE TREATMENT OF GENITO-URINARY AFFECTIONS.

ALLEMARQUE (*Revue de Chir.*, No. 1, 1896) subjected twenty patients affected with acute or chronic gonorrheal cystitis, tubercular cystitis, or purulent cystitis from various causes, to formol treatment, the drug being applied either as instillations (one-per-cent. solutions) or irrigations (one-fifth per cent. solutions). Some of the cases, both acute and chronic, were cured promptly, others showed no improvement, while in still others the treatment had to be suspended on account of the active inflammatory reaction which it excited. In the cases of anterior urethritis, formol caused great pain. This was not so marked when the posterior urethra was affected. In tubercular cystitis, reaction was particularly favorable to the drug; here it was used as an instillation or irrigation; sharp pain was always excited, but lasted only a few minutes; blood rapidly disappeared from the urine, and the symptoms quickly yielded.

THE BACTERIA OF CATGUT, AND ITS STERILIZATION.

ZAJACSKOWSKI (*Centralbl. für Chir.*, No. 1, 1896) has in various kinds of raw catgut found two micro-organisms—one identical with Brunner's catgut bacillus, the other of different appearance and properties, and named by the writer Beta Catgut Bacillus, as opposed to Brunner's α bacillus. The β bacillus is of long, slender, rod shape, with rounded ends, very mobile, and giving culture results differing from those of the α bacillus.

The research as to the resistance offered by these organisms to sterilizing methods is of interest; both are highly resistant to heat—dry or moist—and to antiseptic agents, and both were found to be of importance, increasing by their presence the virulence of pyogenic organisms, though their inoculation or intra-venous injection as a pure culture gives rise to no reaction. When injected with a

dose of streptococci which, used by itself, produced merely a local reaction, there followed death from septic poisoning in two or three days. An elaborate method for the sterilization of catgut is recommended to destroy the action of all organisms, viz.: twenty-four hours in oil of juniper, twelve hours in ether, sixty hours in hydrochloric acid (1:500), two and a half hours' exposure to a temperature of 150° C., and finally two and a quarter hours in boiling xylol.—*Edinburgh Medical Journal*, March, 1896.

INFECTION WITH TUBERCLE THROUGH THE GENITAL ORGANS.

DOBROKLONSKY (*Centralbl. für die Krankh. des Harn und Sexual Organe*, bd. vi, heft 10), as the result of the examination of twenty-five phthisical bodies, found tubercular lesion of the epididymis once; a bouillon culture produced tuberculosis when injected into the genital organs of a female animal.

His conclusions are: That the poison may enter by the genital tract in man as in woman, and that this mode of entry is probably of great importance; that infection occurs only where tubercles exist locally in the genital organs; that, as this is relatively uncommon, infection of this sort is correspondingly rare; that the local evidence of disease is often long unnoticed and therefore the risk increased.

REPORTS ON LITHOLAPAXY.

ALBARRAN and POUSSON (*Centralbl. für die Krankh. der Harn und Sexual Organe*, bd. vii, heft 1, 1896) report 139 cases of litholapaxy. Thirty of these were men past seventy years. Nine had passed the eightieth year. The largest stone measured 2⅜ inches in its largest diameter and weighed about three ounces. Of Albarran's eighty cases, one died of anuria. Of Pousson's fifty-nine, two died, one of infectious nephritis seventeen days after operation, and one of rupture of the bladder during operation. Albarran stated that two-thirds of his cases came with infected bladders. Eight cases were operated on without anesthesia.

THE TREATMENT OF TRAUMATIC HYDRONEPHROSIS.

WAGNER (*Centralbl. für die Krankh. Harn und Sexual Organe*, bd. vii, heft 1, 1896) shows that cases of true traumatic hydronephrosis are extremely rare. Since these cases, without exception, follow severe injuries to the kidneys or ureter, there is always a hemorrhagic, often urinous peri-renal and peri-ureteral extravasation. When this is at all extensive there is developed a pseudo-hydronephrosis. True and false traumatic hydronephrosis can also arise in this way—the latter condition from peri-renal and peri-ureteral extravasation compressing the ureters, in which case the affection is usually transitory, since absorption again frees the lumen of this canal. If there has been very extensive blood-extravasation, partial organization may take place, giving rise to new connective tissue which by its contraction may partly obliterate the ureter, producing permanent hydronephrosis. A true traumatic hydronephrosis is observed only when there is a wound of kidney, pelvis, or ureter, and incomplete or complete cicatricial contraction of the lumen of the ureter results. In these cases also there is sanguinolent, often urinous, extravasation into the retro-peritoneal tissues. The true hydronephrosis develops only after some time, months or years, following the trauma. In any case of wound of the kidney substance, the free bleeding may occasion blocking of the ureter by blood-clot or fragment of kidney, causing an accumulation of blood and urine in the pelvis of the kidney and a true traumatic hydronephrosis. This can develop within a few days of the wound, but is usually of short duration, since, as the hydrostatic pressure increases in the kidney, the obstruction is washed out of the ureter, large quantities of urine mixed with old blood-clot escaping from the bladder. True traumatic hydronephrosis can also result from displacement of the kidney through violence causing kinking of the ureter. These cases of traumatic hydronephrosis become by infection traumatic pyonephrosis, the infection being excited either by catheterization or puncture, extension of a cystitis, or emigration of colon bacilli from the gut.

As to treatment, nephrectomy is indicated only in very exceptional cases—that is, when the trauma has been so extensive as to practically destroy the secreting substance of the kidney, or when the same result has been incident to infection. The operation of choice is nephrotomy or pyelotomy followed by drainage. In case the obstruction is not overcome and the ureter does not become pervious, the ureter is freed in the upper part of its course, and the seat of obliteration freely exposed; according to the condition of the parts there is then made either an incision of the stricture with following oblique suture,

or resection with suture of the two ends, or implantation of the resected ureter into the pelvis of the kidney. Traumatic hydronephrosis due to displaced kidney is, of course, treated by nephropexy.

PREPARATION OF GAUZE DRESSING.

MARTENSON (quoted in *La Médecine Moderne* of Feb. 22, 1896) thus prepares dressings: Rolls of cheesecloth about thirty yards in length are folded and placed in jars. On these the following solutions are poured, depending upon what kind of gauze it is desired to produce.

Carbolized gauze, five-per-cent.:

Colophene, 50 parts;
Castor oil, 15 parts;
Carbolic acid, 28 parts;
Alcohol, 90°, 207 parts.

Three hundred parts by weight of this mixture are taken to five hundred parts of gauze. Or the following may be used:

Vaselin, 30 parts;
Carbolic acid, 28 parts;
Benzin, 242 parts.

Three hundred for five hundred of gauze.

Thymolated gauze:

Thymol, 10 parts;
Essence of turpentine, 3 parts;
Paraffin oil, 10 parts;
Benzin, 200 parts.

Three hundred and three of the solution to five hundred of the gauze.

Sublimated gauze:

Bichloride of mercury, 1½ parts;
Chloride of sodium, ½ part;
Glycerin, 15 parts;
Distilled water, 500 parts.

Equal parts of the solution and gauze are employed.

Iodoform gauze:

Iodoform, 50 parts;
Paraffin oil, 10 parts;
Ether, 400 parts.

The weight ratio between the amount of solution used and the gauze is 460 to 500. The gauze is allowed to soak for twelve hours in this solution, is then dried, and stored in an antiseptic, air-tight jar.

COMPARATIVE INFLUENCE OF ETHER AND CHLOROFORM ON THE KIDNEYS.

ISENDRATH (quoted by the *Centralbl. für die Krankh. der Harn und Sexual Organe*, bd. vii, heft 1, 1896) announces the following results of his study of the comparative influence of ether and chloroform on the kidneys:

1. Existing albuminuria is increased more by ether than by chloroform.

2. Albuminuria develops more frequently after chloroform than after ether.

3. The effect of both these drugs on amyloid kidneys is the same. Cylindruria with or without albumin develops in an equal proportion of cases after chloroform and ether, but disappears quicker after ether. The after-effects of chloroform on the kidney are far more serious than are those of ether.

SECONDARY CANCER OF THE UMBILICUS.

QUENU and LONGUET (*Rev. de Chir.*, No. 2, 1896), as the result of an exhaustive study of this subject, hold that there are two methods of invasion of the umbilicus—one by continuity, the other from a distance by means of cancerous emboli or through the channels of the lymphatics.

Invasion by continuity is that observed when the infected viscera are in direct contact with umbilical tissues. Sometimes the disease is retro umbilical, and the infiltration begins from the posterior layer of the cicatrix, extending from behind forward. Sometimes the original tumor is intra-umbilical—that is, the contents of the umbilical hernia become infiltrated; the cicatrix is then attacked along its borders by the eccentric growth. When the original infection is retro-umbilical the viscus affected may be the ovary, stomach, mesentery, omentum, or liver. Cruveilher has frequently noted adhesions in the pyloric region of the stomach and the abdominal walls in the region of the umbilicus. The ultimate result of this umbilical inflammation is the formation of a gastro-cutaneous fistula, opening either near the umbilicus or directly through the scar. In a certain number of cases the viscus protrudes through the umbilicus as a hernia. A few cases of epiplocele undergoing cancerous degeneration have been noted.

In the cases of peritoneal carcinosis with abundant ascites, the umbilicus is often bulged out, forming an hourglass-like projection and containing a gelatinous fluid. The peritoneum in this region is, however, no more prone to be affected than that lining the rest of the abdominal cavity. Parietal peritoneum is a bad conductor of malignant infiltration. The lymphatics are especially the means of transferring cancerous infiltration from the

viscera to the umbilicus; the seat of cancer in two out of three cases involves the intestinal canal, once out of three cases the utero-ovarian tract. It is necessary to study the course of the lymphatic trunks which might carry infection to the umbilicus. As to the course of the lymphatics in the stomach, Sappey teaches that these vessels having reached the periphery of the viscus empty into very small ganglia lying between the layers of the gastro-hepatic and gastro-colic mesenteries, passing in three groups parallel to the coronary and right and left epiploic arteries. The group which follows the coronaries passes from right to left—that is, from the pylorus to the cardiac end of the stomach—running then downward and toward the right, ending in the supra-hepatic ganglia. The group which passes parallel with the left gastro-epiploic artery runs from left to right, uniting behind the first portion of duodenum with the lymphatics of the liver, and terminating in the same manner as the latter. The group which runs parallel with the right gastro-epiploic artery runs upward and to the left of the splenic vessels, ending in the same ganglia which receive the lymphatics from the spleen. It is evident there is no direct connection between the lymphatics of the stomach and the umbilicus. The second group of these vessels, however—those which unite with the lymphatics of the lower surface of the liver—give an indirect means of communication, for they communicate with others probably in the right border of the lesser omentum, forming the satellites of the portal vein, while also communicating with the lymphatics of the longitudinal fissure of the liver, this in turn being continued along the suspensory ligament to the umbilicus. This is apparently the course which infection from the stomach pursues. Hence it is evident that the umbilicus as well as the liver may show secondary deposits in case of cancer of the stomach, and that these may exist in both regions. The course of infection by means of the lymphatics of the intestine is not explained. The infection in case of cancer of the utero-ovarian tract is as follows: A part of the uterine lymphatics follow the round ligament, emptying either into the inguinal glands or the crural or iliac glands; there is, however, a direct lymphatic connection between the umbilicus and the inguinal and iliac glands. In certain cases cancer of the umbilicus becomes disseminated. The lymphatic vessels passing from the umbilicus are superficial and deep. The superficial lymphatic vessels pass into the axillary glands; others empty into the upper inguinal lymphatics. The deep glands pass either into the retro-sternal ganglia or the anterior lymphatics of the liver and diaphragm or into the iliac glands.

As to the local treatment of carcinomatous tumors of the umbilicus, if the nodule is secondary, interference with it is of course futile. When it is impossible to determine whether or not the cancer is primitive, operation should be performed in the hope that there is no other malignant infiltration which may be beyond surgical treatment. By operation, positive diagnosis can be made, and in case the growth is primitive a radical cure may be effected. When there are reasons to suppose there are some areas of gastro-intestinal carcinoma, there should be no interference with the umbilical growth. When the symptoms of gastro-intestinal disturbance are slight, operation is to be performed, especially if an incision in part of the growth shows it to be squamous, *i.e.* epithelial, not cylindrical, the latter always showing that it is secondary to visceral involvement.

Fisher performed an omphalectomy in one case and demonstrated cancerous infiltration, the removal of which required resection of a portion of the stomach and colon. The patient lived for two months. When secondary infiltration of the umbilicus appears, there can be almost no hope of radical cure, since even though the primary focus and the infiltrated umbilicus be removed, the lymphatic tissues between are probably infiltrated and will give rise to new cancerous growths; hence the appearance of secondary cancer in the region of the umbilicus may be said to indicate a hopeless condition of affairs and one which contraindicates attempts at radical cure. When a primitive nodule is utero-ovarian, total removal of the ovaries and uterus is indicated.

NON-INTERFERENCE IN TUBERCULOUS ABSCESS.

SHAFFER (*New York Medical Journal*, Feb. 29, 1896) states that after an experience of many methods he came gradually to adopt a course which appeared to him to have a rational foundation. He attempted to insure as perfect mechanical protection as possible to the diseased joint or spine, and to maintain the general health in every available way, hoping that the actual disease might cease before the abscess opened (and this proved to be the case on many occasions), or to await the

occurrence of either severe local or important general symptoms, due to the abscess itself, before he resorted to incision, etc. After he adopted this plan he found, to his surprise, that many abscesses entirely disappeared; that some became quiescent or encysted; that few, if any, gave rise to trouble; that those which opened spontaneously almost uniformly did well; and that his results were more satisfactory and more permanent.

The value of mechanical treatment cannot be overestimated. It is absolutely essential to success. It is not enough that we simply apply a support and then leave the patient to the care of the instrument-maker. The surgeon must feel the same responsibility regarding attention to details that he does in treating a fracture or in following up the dressings after a major operation. He must know that the mechanical treatment is doing the work required of it and that real support is being secured.

The method also is important. For example, recumbency in Pott's disease, except as a temporary expedient, is a fallacy; so is the weight and pulley in hip-joint disease. The various portable frames and beds, the leather and felt jackets do not afford proper protection to the diseased conditions under consideration. The fundamental principle of mechanical treatment in chronic tuberculous joint-disease is: protection to the diseased part, with the maintenance of functional activity of the other parts of the body. The plaster-of-paris jacket is not adapted to the treatment of Pott's disease, and he would no more think of applying it in this condition than he would of opening an abscess without aseptic precautions. Long ago, in 1878, in his brochure on Pott's Disease, he called attention to the fact that gypsum splint was useless in chronic spondylitis above the eighth dorsal vertebra. When the disease is below that point, we have a far more accurate means of support than the plaster-of-paris jacket, and a well adjusted ball-and-socket chin-piece is so far superior to the "jury-mast" as a support above the eighth dorsal vertebra that the latter should be relegated to the eighteenth-century practice where it belongs.

With an accurately fitting antero-posterior steel support based upon the Taylor principle, supplemented when practicable by a properly applied belt, making pressure upon and limiting motion at the seat of disease, we have as nearly as may be an ideal protection for the carious spine.

Why should we limit superior thoracic respiration in dorso-lumbar Pott's disease, or why should we interfere with abdominal respiration in cervico-dorsal disease? The ideal apparatus should support the diseased portion of the spinal column and allow, so far as practicable, functional activity at the non-diseased portion. This certainly cannot be accomplished by any encasing jacket which attempts (though it does not succeed satisfactorily) splinting any part of the spinal column.

Ordinarily the tuberculous abscess pursues a benign course. Frequently we are obliged to search for it, especially in dorso-lumbar Pott's disease. The patient may be wholly unaware of its existence. It gives rise to no inconvenience. It is simply a sign of disease, the location of which is remote from the indolent and ofttimes painless expression of it.

So long as we know of the existence of an abscess in chronic joint-disease by our sight or by palpation only, we are perfectly justified in letting it alone; there are no indications for active interference. As has been mentioned, it may be sterile. Then, again, it may be absorbed, or we may cure the cause of the abscess before the latter becomes at all pronounced, in which case the abscess becomes a local affair and has no special significance.

But even under the most favorable circumstances the abscess may assume a different phase. The simple tuberculous material may undergo a change, and a pyogenic element be added. The so-called "mixed infection" then occurs. Under these circumstances we may find a slight daily rise of temperature, showing a minor degree of septicemia, and sooner or later the abscess may increase in size and the process of burrowing may begin.

It is in conditions of this kind that the judgment, experience, and patience of the surgeon will be tested. The temptation is to use the knife at once. The author's advice is: Do not be in a hurry to do so. Wait for a while. The septicemic flurry may, and probably will, soon pass over—if you protect the articulations. And if the infection proves to be a slight one, the general condition remaining good, with approximately good appetite, sleep, and digestion—wait. Get your patient up—in his apparatus. Let the healthy parts of the body move in the air and sunshine. Even if the temperature goes to 101° or even 102°, do not be worried; in children this is not a serious menace. And if you watch and wait and maintain the joint-pro-

tection, you will probably find that the condition will gradually subside.

Those who watch and wait will reach the conclusion which the writer has reached long ago—viz., that the ultimate recovery of the patient with a useful joint is better under the plan of non-interference than it is under that procedure which makes no practical distinction between a tuberculous abscess and a pyogenic abscess, but opens either indiscriminately.

One hears a good deal about the burrowing of abscesses, of the "maceration" of healthy parts by the contained matter, etc. But the author has learned, under ordinary circumstances in chronic tuberculous abscess, to have no fear of burrowing.

Of the thirty-five patients (all the abscess cases which have occurred in the hospital for over four years), twenty-six remained under the care of the institution for a sufficient length of time to test the value of the plan of non-interference. Of these twenty-six patients, three had each two distinct abscesses, making twenty-nine abscesses treated in all. In two of the double-abscess cases there were large bilateral ilio-psoas abscesses, and it is worthy of special note that absorption of the abscesses occurred in all these cases.

Of the twenty-nine abscesses, eight (27.58 per cent.) underwent complete absorption; nineteen (65.51 per cent.), after opening spontaneously, closed under simple external dressings in periods ranging from two to twenty-one months; and in two (6.89 per cent.) there are still small sinuses discharging a few drops daily; 93.09 per cent. have either closed or been absorbed.

Of the remaining nine patients, one was removed by her mother after efforts, up to the time of removal, had failed to produce an adequate joint-protection on account of the location of the abscess. In one instance the abscess was nearly well when the patient entered the wards.

In seven instances the patients either entered the wards with phthisis pulmonalis, or had multiple joint-disease, or were removed from the care of the hospital while under active treatment. Of these seven, five died, and two have small sinuses which discharge slightly.

In conclusion the writer emphasizes two points: 1. None of these patients were selected, and none were declined, on account of their condition at the time of their application. 2. He hopes that others who hold different views, and especially those who practice incision, etc., will make reports of entire unselected groups of patients with tuberculous abscess of the joints. We shall then have a basis for intelligent comparison.

GASTRIC, INTESTINAL, AND RECTAL HEMORRHAGE.

MANLEY (*Mathews' Medical Quarterly*, April, 1896) says that while bleeding through the anus is in a general way not to be viewed with the same alarm as that coming from the lungs or stomach, when the hemorrhage is considerable in quantity or persistent it should not be viewed with indifference. The effects upon the stomach are quite invariably emetic; upon the bowels, purgative.

Pathological lesions which open the way for gastric hemorrhage are simple ulceration, tuberculosis, or cancer. It is a common clinical observation that large gastric hemorrhage is common among females at puberty and the menopause, and is rarely fatal. *Per contra*, such hemorrhage is extremely rare and also of very serious import in a male, excepting that type of hemoptysis so general among hard drinkers. In the case of a female, preceding these large hemorrhages there is usually a period of indigestion, anemia, and loss of strength. Recovery seems to be complete. If the cardinal lesion in these cases is tubercular ulceration, the bleeding would seem to be a specific.

Malignant disease of the stomach is rarely attended by large bleeding. In young men of good habits, sudden or repeated gastric hemorrhage is a most suggestive sign of sarcoma. In the incipient stage of this disease the most pronounced symptom is a severe anemia with rapid wasting of flesh. It is only when the disease advances upwards and reaches the peritoneum that suffering begins. Hence it is that cancer of the viscera only becomes recognizable when it has advanced so far that relief by operation is out of the question.

Sarcoma of the stomach is widespread, and is unlike malignant epithelial infiltration (which primarily almost invariably attacks the pylorus); bleeding from the intestines—as in the course of typhoid—is manifest only when evidence of mortal exsanguination, or a state close to it, is apparent; deep shock, collapse, and syncope, all appear in rapid succession.

Tubercular ulceration, though common enough, rarely gives rise to hemorrhage.

Malignant disease of the small intestine is rare as a primary affection. Hemorrhage,

except at the rectal terminus, of the large intestine, is uncommon, if we exclude dysenteric ulceration. As a symptom of surgical lesion, it is found in cases of invagination in young children. Any type of ulceration may give rise to bleeding, though this part of the alimentary canal, being devoid of lacteals or peptic glands, is the least vascular.

Traumatic hemorrhage of the colon is extremely rare. When it occurs the blood is ejected in considerable amount undigested and imperfectly coagulated. The colon is so placed that it is well protected against the effect of traumatism.

Rectal and anal hemorrhages usually occur from areas close to the verge. By digital examination it is possible to reach into the rectum as far as the insertion of the peritoneal coating or the beginning of the sigmoid flexure. This marks the utmost limit of direct surgical manipulation.

Among predisposing causes of anal and rectal hemorrhage are: the mechanical impediment to circulation peculiar to this situation, the almost vertical direction of the efferent vessels in the standing position, the absence of valves, and the irregular habits of life among human beings—for it does not appear that rectal disease is anything other than very rare in the lower animals. The most common cause is a hemorrhoidal or varicose state of the vessels about the anal verge. Tubercular, next to simple, ulceration of hemorrhoidal walls, is the most prolific cause of exhaustive hemorrhage from the anus. Cancer ranks third in frequency.

Cancer of the rectum, like the visceral type elsewhere, is not very painful in the beginning, and, with unusual exceptions, large or frequent hemorrhage is not present even when the disease is making most rapid headway and is spreading into contiguous parts.

The immediate cause of hemorrhage from the anus is through straining at stool, when a thin-walled, widely distended tumor ruptures. Arterial papillomata of the rectum are not uncommon causes of most exhaustive depletions. In these cases the mucous membrane of the rectum investing the external sphincter is studded with minute raspberry papillæ, which are apparently devoid of an epithelial investment, and bleed on the least irritation.

Operative bleeding from the rectum is a most serious complication in those whose general health is enfeebled, who have become anemic, or who have been exsanguinated by previous vascular drains. When profuse operative hemorrhage arises on division of large, thick-walled veins, and the momentary gush for an instant floods everything, moderate compression will promptly subdue it. In operating here, as elsewhere, the divided arteries give issue to the greatest loss of blood. If operating within the lumen of the bowel, nothing less than a thorough and complete dilatation of the external sphincter will enable one to expose those arteries which ramify through an area of loose connective tissue and quickly retract far up out of sight. The best way to provide security against dangerous hemorrhage in operative manipulation is to be well prepared for it, and close every bleeding point as we proceed with each stage of the operation.

Hemorrhage in all operations on the rectum for malignant disease is often quite unmanageable. In these cases the coagulation is enfeebled. In opening up through an osseo-ligamentous structure like the sacrum, in posterior sacral resection, we will note that the vessels are thin-walled, and many of them ramify through tortuous canals or paths in cancellous bone tissue, or through the interligamentous spaces, in places where it is very difficult, if not impossible, to secure the mouths of spouting vessels.

Post-operative or secondary hemorrhages after operations on the rectum are comparatively rare. The rule should be always to secure bleeding arteries before returning the prolapsed bowel within the sphincter. By the adoption of such measures as will insure prompt and safe hemostasis, there will be but little danger of a large secondary oozing, though, unless all arterial leakage is arrested by ligation, torsion or the thermo-cautery at the time of operating, dangerous secondary hemorrhage may follow. After the sphincter has contracted and the dressings are applied, the blood, instead of making its way outward, may drain into the empty intestine. The evidence of its presence there is only made manifest by a death-like pallor of the patient, with a thready pulse and impending syncope. The surgeon must judge from constitutional symptoms as to whether hemorrhage is occurring.

In many small angeiomatous papillæ with sessile bases and deeply imbedded vascular rootlets, the thermo-cautery is invaluable; with vessels of larger bore, secure ligation constitutes our main reliance. The patient should always be watched for several hours after operations within the sphincter. Should

hemorrhage ensue, palliative treatment may be adopted for a while, and, this failing, the patient must be put upon the table, the sphincter re-dilated, and the bleeding point found and secured.

Symptomatic hemorrhage from the rectum in persons of full habits must not be confounded with the presence of local lesions. It is nature's way of seeking an outlet for overdistended vessels, and may be avoided by the use of purgative medicine and care in regard to diet.

Hemorrhage from tubercular ulceration is sometimes very profuse. These ulcers usually lie in the posterior wall of the gut. Cancer of the rectum, at least in the early stages, is seldom attended with bleeding. In all these cases pain is a prominent symptom during the act of defecation, but hemorrhage is seldom seen. Gummatous masses usually infiltrate the non-vascular stratum of lymphoid tissue, which near the outlet of the rectum is of unusual thickness. The hyperplasia which they cause may produce stenosis, but rarely ulceration or hemorrhage.

Hemorrhage succeeding tubercular ulceration of the rectum should be treated by local applications and attention to the general health.

The author concludes:

Hemorrhage from the rectum may be symptomatic of constitutional or organic disease, as plethora or hepatic congestion.

In consequence of a lesion of some part of the digestive tube, anywhere from the flexure to the cardiac end of the stomach, blood may escape, changed or unchanged, through the rectum.

The local lesions, in their order of frequency, as a source of hemorrhage in the ano-rectal outlet of the intestine, are: (1) hemorrhoids, (2) simple or tubercular ulceration, (3) malignant disease.

Treatment includes constitutional and local measures. Hemorrhage from simple, tubercular, cancerous, dysenteric, or typhoidal ulceration in any part of the digestive tube above the rectum is quite beyond relief from direct surgical methods, and hence its treatment must, for the present at least, remain within the domain of medicine.

Surgical treatment of hemorrhage of the rectal pouch and anus, when non-malignant, is generally practicable, safe, and permanent in results. In order, however, to be rendered effectual and definite, thorough dilatation of the anus and eversion of the rectum are imperative, that the bleeding points or source of hemorrhage may be brought under the immediate eye for direct and effective treatment.

When bleeding succeeds hemorrhoids for the first time, or when its quantity is small, moderate catharsis with simple astringents in the form of suppositories will favor its arrest without recourse to radical or severe methods.

IS SURGICAL INTERVENTION WARRANTED IN PRIMARY RENAL TUBERCULOSIS?

This question was the subject of an able address delivered before the last French Medical Congress by Dr. Pousson, the well known surgeon. He first described the different methods of invasion in primary and secondary infection, as the bacilli locating in the vascular zone of the organ in the former case, and producing the phenomena of congestion, pains, and hematuria; secondary infection attacks the zone of the pyramids and is a mixed process starting in the bladder, and revealing its presence chiefly by suppurative lesions or pyuria. The hematuria is often the only symptom of infection for some time, and he cites many cases where it persisted alone for months. Here he thinks surgical intervention entirely uncalled-for, as this form is not exposed to complications from other infections, owing to the isolated position of the organ. Only when it is accompanied by severe pains preventing rest, or excessive, weakening hematuria, which forces the hand of the surgeon, as it were, is a surgical operation legitimate, and nephrectomy indicated. In all cases where the other organs seem to be exempt, he agrees with the majority of French physicians that local attempts to exterminate these bacilli from the system are apt to be fruitless and to be followed by their reappearance there or elsewhere.—*Archives Clin. de Bordeaux*, January, 1896; *Journal of the American Medical Association*, March 28, 1896.

THE TREATMENT OF INTESTINAL OBSTRUCTION FOLLOWING LAPAROTOMY.

ADENOT (*Rev. de Chir.*, January, 1896) discusses at some length the causes, symptoms, and treatment of post-operative intestinal occlusion. This grave sequence of laparotomy is in most instances caused by intestinal adhesions to surfaces denuded in the course of the operation. It may, moreover, be due to bands, to faulty positions of intestine, to

intestinal spasm, and to errors committed in the operation. The author attaches much importance to an abnormal condition of the splenic flexure of the colon as a further cause of the occlusion. The large intestine at this part of its course may form a deep retiring angle, by the sides of which intruding coils of small intestine may be compressed. In considering the treatment of post-operative obstruction, the author insists on the advisability in most cases of surgical intervention. Whilst acknowledging that success may sometimes follow the administration of mild purgative draughts or enemata, he points out that the use of such means should be very carefully practiced and supervised, as they might lead to a speedy aggravation of the patient's suffering and necessitate an early operation. The use of active purgatives, and also of opium, is condemned. Laparotomy, it is urged, should be performed in cases in which repeated vomiting has followed a complete retention of stools and intestinal gas lasting from three to five days. The surgeon is advised to examine the cecum in the first place; if it be distended he should next direct his attention to the sigmoid flexure. When the extent and seat of the occlusion have been determined, the cause should be sought for by examination of pedicles, of raw surfaces, of possible kinks of intestine, and of drainage tubes. Obstruction at the splenic flexure is indicated by distention of the transverse colon. In cases of difficulty it may be found necessary to expose the whole of the intestinal canal at the same time, but this step of so-called evisceration should be avoided if possible. In cases in which the obstruction is seated at an infected centre, as after removal of suppurating uterine appendages, the surgeon should, in order to prevent infection of the whole peritoneal cavity, avoid laparotomy. It is impossible to lay down strict rules for his guidance in such an emergency: be must be guided by the circumstances of the case. In some few instances he might rest content with the performance of enterostomy. Although this operation in other cases of post-operative obstruction is more simple than laparotomy, the latter operation, it is held, is decidedly the operation of election. An artificial anus should not be established except in cases in which the patient is *in extremis*, or after failure to find any definite cause of the occlusion, or, again, if the symptoms of obstruction persist after the performance of laparotomy.—*British Medical Journal*, Feb. 29, 1896.

SURGERY OF THE URETERS AND KIDNEYS.

ROBB (*Western Reserve Medical Journal*) gives the following excellent summary:

A. Surgery of the Ureters.—The existence of an uretero-abdominal fistula is generally considered an absolute indication for nephrectomy. The study, both from a clinical and pathological standpoint, of injuries to the ureter occurring during operations for large abdominal tumors, is as yet by no means complete.

In cases of accidental injury to the ureter, every effort must be made to adopt some measure which will bring the ureter again into connection with the bladder before recourse is had to nephrectomy. The possibility of a plastic operation by which the cut ends of the ureter can be united is demonstrated by cases.

Subperitoneal tumors which grow deep down in the pelvis and push before them the neighboring organs, not infrequently displace the ureter *en masse* so that the organ is often found in an abnormal position, and is exposed to the danger of an accidental wound. The danger becomes greater when the tumor has pushed itself up between the bladder and the ureter and has separated these organs from one another.

The arteria ureterica, a branch of the renal artery the existence of which has up to the present time been almost ignored, is, in the writer's opinion, of the greatest importance, because in trying to stop a hemorrhage deep down in the pelvis and in the neighborhood of the dislocated but unrecognized ureter we are liable to tie or cut through this organ.

In severe operations the ureter is often freed from its connections for a distance of from ten to fifteen centimeters, and lies free in the pelvis. In these cases this part of the organ depends for its nourishment entirely upon the arteria ureterica which is intimately connected with the fibrinous capsule of the ureteral wall.

After difficult laparotomies, especially when stitches or ligatures have been laid deep down in the pelvis, it is of the utmost importance, before the abdominal wound is closed, to make sure that neither of the ureters has been ligated. Such an accident may be diagnosed by finding a cylindrical mass about as thick as the finger, which is formed by the ureter in which the urine is dammed up. In such cases the impediment must at all costs be removed.

The accidental ligation of the ureter pro-

duces a hydronephrosis, and later on, on account of the pressure of the sterile urine, atrophy of the substance of the kidney. It does not necessarily endanger life.

In the presence of an uretero-vaginal fistula, it is advisable to first make an artificial vesico-vaginal fistula, after which a plastic operation for direct closure is indicated. This at any rate must be first attempted, before any more serious procedure is decided upon.

When a third ureter exists, and when this supernumerary ureter empties into the urethra or into the vault of the vagina, we should see whether it does not for some distance in its course run quite close to the bladder. If this is found to be the case, by an epicystotomy it can be connected directly with the bladder, after which the peripheral portion can be destroyed by means of the Paquelin cautery.

B. Nephrotomy and Nephrectomy.—The most recent researches in the surgery of the kidneys point to the necessity of conservative procedures.

The writer's experience goes to support Favre's theory, that when the function of one ureter is interfered with by compression or ligation, the other kidney can gradually become accustomed to compensatory work, so that later on the extirpation of one kidney can be well borne; or, in other words, a single kidney can finally do the work of two.

The cause of death after the extirpation of one kidney before the other kidney has had time to accustom itself to the increased work is almost entirely an acute parenchymatous nephritis. Other experiments are necessary before we can allow the truth of Favre's theory that this acute nephritis is due to a previous special intoxication of the blood with ptomaines.

Should Favre's theory be confirmed by future experimental work as well as by clinical experience, the extirpation of the kidney at a second operation will be indicated.

Whenever in the course of a severe operation in the abdominal cavity the ureter is accidentally cut, extirpation of the kidney on that side is not indicated at the time. If it is impossible to connect the ureter directly with the bladder, an artificial uretero-abdominal fistula should be made, and nephrectomy should be performed later.

Even with a uretero-abdominal fistula, under ideal circumstances, it might be possible for the corresponding kidney to remain absolutely sound. Experience, however, shows that, owing to an ascending infection, a pyelitis or even a nephritis usually follows. Consequently, in the case of an uretero abdominal fistula, nephrectomy is indicated.

It has been noticed that through a portion of the ureter ten centimeters long, fastened to the abdominal wound, the urine is evacuated in peristaltic rhythm. This would justify the conclusion that under normal circumstances the rhythmical flow of the urine takes place, and as a consequence of rhythmetical contraction occurring not in the ureter, but in the pelvis of the kidney.

C. Tumors of the Kidney.—In the differential diagnosis between renal tumors, especially hydro- and pyo-nephrosis and ovarian tumors, errors are not uncommon. Definite clinical signs which might aid us are often absent.

A hydronephrotic sac can often empty itself entirely without any apparent cause (intermittent temporary hydronephrosis).

A peritonitis following upon a puncture of a renal tumor, owing to which fluid has escaped into the abdominal cavity, and the consequent adhesions, may render a differential diagnosis impossible.

A hydronephrotic sac can easily be freed from the connective tissue which holds it, provided there has been no inflammatory complication, or the inflammation has been confined to the peritoneum. If, however, the inflammatory process has been peri-renal, the enucleation of the sac will sometimes present insuperable difficulties.

The contents of a hydronephrotic sac may become purulent in consequence of an ascending catarrhal infection of the bladder. In these cases, if the ureter closes, the catarrh of the bladder may disappear, and thus no proof may remain that the infection came originally from the bladder.

In the walls of a hydronephrotic sac of moderate size, renal tissue still capable of functionating can often be found, the preservation of which is often of the greatest importance to the patient.

In doubtful cases an exploratory laparotomy is indicated. Such an operation does not necessarily exclude the possibility of nephrectomy through a lumbar incision, if such be indicated.

When the renal tumor is combined with a retro-peritoneal abscess, the operation through the peritoneum may be dangerous, since the abscess cavity lies close to the abdominal cavity. It will not always be possible to recognize this complication early enough even after a preliminary laparotomy, so that when-

ever such a condition is suspected the lumbar incision should be preferred.

In dealing with hydro- or pyo-nephrotic tumors the utmost conservatism is to be recommended. The spontaneous cure of such a sac, even after the lapse of months, may be expected and the patient left with a useful kidney.

Tumors of the kidney developing with pregnancy have been but little studied. The hydro- and pyo-nephrosis caused by compression of the ureter can eventually give rise to a parenchymatous nephritis. Under these circumstances the induction of premature labor is indicated.

In the diagnosis of renal tumors the cystoscope plays an important rôle, more especially with reference to determining the side on which the sound or diseased kidney is situated.

D. Nephrolithiasis, Renal Tuberculosis, Malignant Tumors of the Kidney, and Nephrorrhaphy.—Calculus in the pelvis of the kidney may exist with symptoms of an ordinary pyo-nephrosis. It may have existed for many years without giving rise to any characteristic symptoms.

In cases of renal calculus, nephrolithotomy is indicated.

In any case in which a laparotomy is performed for an abdominal tumor, it is advisable to palpate both kidneys directly, and more especially when there has been any history pointing to the existence of a renal calculus, even although the symptoms may have occurred many years before.

In connection with the question of nephrolithotomy, it must be remembered that the formation of a calculus in the kidney is not infrequently bilateral, and that a successful operation may not therefore cure the patient.

The diagnosis of unilateral primary tuberculosis of the kidney is very difficult, since both the clinical and the bacteriological examinations are often unreliable.

The justifiability of operation in cases of unilateral primary tuberculosis of the kidney is to-day undeniable.

In cases of unilateral tuberculosis of the kidney, nephrectomy is indicated.

It may sometimes happen that in the attempt to perform a nephrotomy we may encounter an uncontrollable hemorrhage coming from the kidney tissue. In these cases we must, perforce, proceed to a nephrectomy.

The high degree of mortality (seventy-five per cent.) which has been observed after operation for malignant tumors of the kidney, is attributable to two causes: (1) to the technical difficulties encountered during the operation; (2) to metastatic infection. Better results can be looked for from an early diagnosis and from greater perfection in our operative technique.

With respect to the frequency of the occurrence of floating kidney, the views of authorities are at variance. In deciding how far the symptoms complained of by the patient are attributable to this condition, much depends on the judgment of the particular physician. Hence the frequency with which some proceed to operation (nephrorrhaphy).

In cases of floating kidney, fixation is the result which should be aimed at. The exact position—*i. e.*, whether the kidney should be fastened a little higher up or a little lower down—seems to be of but slight importance.

For laying bare the kidney, the lumbar operation according to Czerny's method seems to be the best. This is especially appropriate for the fixation of the kidney, since the upper surface of the organ, when partially separated from its capsule, can be sutured directly to the lumbar fascia which has been freed from its fat.

INDICATIONS FOR VAGINAL AND ABDOMINAL SECTION.

POLK (*Medical News*, Jan. 4, 1896) gives the following as rules for vaginal and abdominal section in diseases of the female pelvic organs:

Vaginal Section: A shallow and wide pelvis in a thin woman; explorations of the pelvis; visceral adhesions in true pelvis; displaced and adherent uterus; smaller ovarian cysts, especially the intra-ligamentous and parovarian; smaller fibroids, especially the soft; extra-uterine pregnancy, up to seventh month, and after death of fetus; pelvic hematocele; puerperal hysterectomy; acute inflammation of appendages, with peritonitis involving cul-de-sac; inflammatory destructive diseases of the appendages, including tubercular disease; pelvic abscess pointing downward; conservative operations on appendages that lie in true pelvis.

Abdominal Section: A narrow and deep pelvis, especially if deformed; explorations above the true pelvis; visceral adhesions in false pelvis or above; large ovarian cysts, especially multilocular, with colloid contents; large fibroids, especially the firm and hard; extra-uterine pregnancy at time of rupture

and at term; extra-uterine pregnancy, with tumor wholly above brim of pelvis and not in relation with uterus; pelvic abscess pointing upward; conservative operations under conditions unfavorable to vaginal section, such as a narrow and deep pelvis, or a deformed and contracted one.

THE REMOVAL OF SUPERFLUOUS HAIR.

The ordinary components of the so-called depilatories are quicklime, soda, and a combination of sulphur and arsenic. The powder is made into a paste, spread on the face or other part, and washed off as soon as dry. It acts by desiccating and dissolving the hair-shaft, and by reason of its irritating nature in unskilled hands is apt to give rise to troublesome consequences. Erasmus Wilson narrates the case of a young lady who had been making an experiment of this sort on her forehead for the purpose of getting rid of a tuft which interfered with the then fashionable mode of wearing the hair. She had unfortunately allowed the depilatory to remain on too long, and it resulted in a slough the size of a shilling, followed by an unsightly scar. The safest of such applications is a paste of barium sulphide and starch applied by skilled hands, regulated in strength to the delicacy of the skin. Kaposi mentions that in the Orient among the Jews a paste is used for the periodical removal of the stubble of the beard, consisting of orpiment and slaked lime boiled with water. In this instance the after-growth does not appear until two or three weeks have elapsed, when the application has to be repeated. But all these methods are at best only palliative, for the formative organ remains, and they are all equally apt to be followed by a stronger growth of the hair, and sometimes they give rise to ugly marks and scars. Ointments have been employed, but in general are to be deprecated, for greasy applications tend to promote the growth of the hair, as on the backs of the hands when vaselin is used to prevent chapping in cold weather. Nevertheless, a strong resorcin ointment, accompanied by powerful friction, has in the practice of a few found favor. The introduction of chromic acid and other caustics into the hair-bulb by means of a needle is uncertain on account of the difficulty of regulating the resulting inflammation. Another popular method of disposing of extraneous hairs is by the tweezers, a painful process and, like the preceding and the razor, only temporary in its effects.

All these methods, however, are unsatisfactory, and it is to our American cousins that we owe the introduction of the only efficient means for the destruction of hair-bulbs. It was an ophthalmologist—Michel, of St. Louis—who first employed electrolysis with success for epilation in cases of trichiasis, and it was afterwards extended to dermatology by Hardaway. The procedure has now become perfected, and has come to be recognized as the least unsatisfactory one for the eradication of superfluous hairs. A blunt needle connected with the negative pole of a galvanic current of one-half to one milliampère or more is introduced into the hair-follicle, if possible without injuring it, and the papilla is destroyed by the decomposition products formed, these probably being caustic alkalies. The hair is then either removed or allowed to drop out, and the operation is followed by a minute red mark, which disappears either without a trace or leaving an extremely fine, shallow depression. Very occasionally these tiny scars subsequently take on a keloid growth. But electrolysis is a tedious process, for no more than twenty or thirty hairs can be removed at a sitting—a circumstance which is open to misinterpretation if the patient be not warned beforehand of the number of sittings required; and though these hairs never grow again, others come forward and have to be dealt with from time to time until all are eradicated. But in the hands of a skilled practitioner this method gives a sufficiently satisfactory result in a limited localized tuft, provided the patient does not mind the inevitable little red spots which temporarily appear after each sitting. But if the growth of hair be in any sense diffuse, on the female chin for example, the tiny hairs beside the old ones keep growing up as the others are destroyed month by month and year by year, so that an almost unlimited attendance is necessary. Indeed, so indefinite is the treatment and so frequently do complaints arise on that account, and if the current be not very carefully adjusted so difficult is it to prevent temporary disfigurement, that many professional men of standing refuse to undertake these cases. This determination on their part we believe to be a mistake, as the unsuccored sufferer flies to quackery.

Electrolysis is the only means known up to the present time which in capable hands is able to destroy the papilla whence the hair grows, without risk of producing serious consequences. All the other procedures, includ-

ing those above mentioned, only result in destruction of the hair-shaft, in which case they are not much superior to the razor; or if the cuticle be penetrated, widespread suppuration and resulting scars are apt to be produced. It is therefore the bounden duty of practitioners to warn their patients against trusting themselves to treatment by these powerful remedies at the hands of unqualified, irresponsible, and often wholly unscrupulous persons.—*The Lancet* (London), Feb. 15, 1896.

OSTEOPLASTIC RESTORATION OF THE METATARSUS.

CRAMER (*Centralbl. für Chir.*, No. 5, 1896) describes a mode of operative procedure adopted by Professor Bardenheuer in the correction of a defect caused by the removal of the third metatarsal bone on account of disease. After removal of the diseased structure the adjacent second metatarsal bone is divided longitudinally by means of a chisel, but not through its tarsal extremity, whose relation with the middle cuneiform bone is preserved. The inner half of the divided bone is then deflected into the place of the removed third metatarsal bone, and to its distal extremity the first phalanx of the third toe is attached. The operation has been successfully performed in a case of tuberculous caries in a boy six years old. The joint between the tarsus and the metatarsus was not opened. The intervals between the second and the fourth metatarsal and between the two parts of the second were packed with gauze. At the end of four weeks the child was dismissed and given permission to stand on the foot, and to walk after two weeks more. Five months after the operation the boy was able to move the affected foot freely, and the member was well formed and like its fellow. The operation is similar to that which has already been employed in the correction of congenital defect of one of the bones of the forearm or leg, and is applicable to other conditions of an analogous character.—*Medical News*, April 4, 1896.

A NEW METHOD OF TREATING WOUNDS ANTISEPTICALLY.

SCHLEICH (*Therap. Monatshefte*, No. 2, 1896) has found that when a watery solution of gelatin is evaporated over formalin vapor a new product results, which is hard, transparent, and resistant to ordinary influences, such as heat, moisture, alkalies, and acids, and which is chemically inactive. Experiment showed that when this formalin-gelatin was introduced into the peritoneal cavity of animals it was in part digested and surrounded by new-formed connective tissue. The introduction into wounds of pathogenic bacteria together with powdered formalin-gelatin was unattended with infection, thus proving that the formalin set free exerted an antiseptic influence *in loco*. The observations were extended to human beings, with the invariable avoidance of suppuration, except in the presence of necrotic tissue (as from ulceration) and of specific infections (such as tuberculosis or syphilis). When, from the presence of necrotic tissue, deposits, or secretion, healthy cells were prevented from coming into contact with the formalin-gelatin and setting free formalin, this was effected by means of a solution of pepsin (5 parts) in hydrochloric acid (0.3 part) and distilled water (100 parts). Formalin-gelatin is prepared by adding to 500 grammes of purified gelatin in solution, 25 drops of pure formalin solution, and evaporating over formalin vapor. The resulting solid body is reduced to powder, and preserved in the presence of a drop of formalin solution. Impregnated with lime salts, formalin-gelatin is capable of taking the place of defects in bone.—*Medical News*, April 4, 1896.

OSTEOPLASTIC OPERATION FOR LOSS OF SUBSTANCE OF THE TIBIA; A SKIAGRAPH SHOWS THE RESULT.

LILIENTHAL (*Medical News*, April 4, 1896) deems the following case worthy of record, because it exemplifies a rather rare surgical operation, and also because the result, as shown by a skiagraph, is quite different from what might have been reasonably surmised from the history of the operation, from inspection after recovery, and even from the most careful palpation.

M. S., a boy nine years old, was run over by a horse-car, early in June, 1894, and sustained a compound comminuted fracture of the right tibia, with severe laceration of the soft parts. There had been a left coxitis resulting in anchylosis some years before, but otherwise the boy was healthy. Severe infection, with profuse suppuration, so menaced the life of the patient that a surgeon, who saw him a few days later, entertained the idea that amputation would be necessary. On June 8 his parents brought him to Mount Sinai Hospital, where the writer proceeded to drain the

wound by several ample incisions. The tibia had been split and comminuted throughout almost its whole shaft, but fortunately the fibula was intact. Numerous detached pieces of dead bone were removed, and it was found that from two to two and a half inches of the lower third of the tibia was gone. The destruction of tissue had been so great that daylight could be seen through the leg for a space as large as a half-dollar. Recovery from this operation was slow but uninterrupted. Several pieces of dead bone were removed at various times, but finally every sinus closed. The limb was, however, useless without the aid of splint and crutch, the loss of tibial substance allowing the foot to flap about in rotation around the unbroken fibula. An aluminum splint was now ordered, and the boy was allowed to walk about with the aid of crutches in the hope that ossification of the interposed fibrous tissue might take place.

On examination several months later it was found that the head of the fibula had been apparently pushed away from its attachment to the tibia and projected well above the knee-joint, causing a deforming protuberance.

Ten months after recovery from the previous operation, the author again operated, to try to restore the function of the limb by tibio-osteoplasty, an operation suggested by success in similar cases in the hands of Gerster, Sands, and others. A longitudinal incision was made over the hiatus in the tibia, all non-osseous tissue between the two ends of bone was removed with the knife, and the bone itself was freshened with the chisel. A long incision was now made over the fibula, and an osteotomy was performed, cutting the fibula at a point just above the lower extremity of the upper tibial fragment. The lower fibular fragment was now tilted inward in such a manner that its side rested against the lower piece of tibia, and its end against the end of the upper tibial fragment. Holes were drilled through the fibula and tibia, and the bones were fastened together with thick twisted silk. The upper piece of fibula was held by the bandage so that it slanted toward the tibia, but it was not sutured. The skin wounds were now entirely closed with catgut stitches, and a firm dressing with a plaster-of-paris splint was applied over all and was kept in place for three weeks, when, at the first dressing, all was found to be healed, excepting two small sinuses, through which, later, the silk sutures and a small, loose piece of bone were removed. Bony union was very slow, and it was not until November 1895 that the splint was discarded. Since that time the patient has been perfectly well and walks with only a very slight limp, which is due to his anchylosed left hip. The head of the fibula has returned to its normal position.

The skiagraph, which accompanied Lilienthal's paper, was taken through the stocking and at a distance of fifteen inches from the source of energy. The view is a posterior one, which of course gives seemingly reversed relations of the bones. It is seen at a glance that the result is an almost normal position of tibia and fibula, with a very thick and dense bridge of bone connecting them obliquely. A faint light streak in the lower part of this bridge seems to indicate the medullary canal of the displaced fibula, but the free end of the upper fibular fragment has separated from the tibia and has assumed its normal position, being connected with the lower fragment of fibula by this same bony bridge.

THE AMBULATORY TREATMENT OF POTT'S DISEASE.

LOVETT (*Medical News*, No. 1207, 1896), in an article with the above title, states that he would not advocate unnecessary recumbency, but he wishes to go on record as advocating, in general, during the acute stage of Pott's disease, recumbency on a frame for the greater part of the time, varied by short periods of going about protected by the most available brace or jacket. During the painful stage, he believes, recumbency should be continuous. The beneficial effect of recumbency must be familiar to every orthopedic surgeon, who must often notice the improved appetite, the increase in flesh, and the diminished fever, when a child with acute Pott's disease is put to bed.

In the use of apparatus it should be remembered that it is all necessarily imperfect from a mechanical point of view, and does not afford complete support, and that traumatism to the spine must result from the use of the jacket or the brace. The more complete and efficient the apparatus, the less the traumatism.

Such are the scattered facts.

Pott's disease is a very grave affection, and in advocating its treatment by recumbency, rather than by ambulatory measures, during the acute stage, Lovett speaks of what he believes to be the very best treatment. Other

modes of treatment are no doubt excellent, but when one wishes to secure the very best result, having recognized that apparatus is intrinsically imperfect, and necessarily so, to accomplish the purpose for which it is intended, it is incumbent upon the surgeon either to insist upon this treatment by recumbency or to transfer the responsibility of ambulatory treatment to the parents. The use of apparatus should be, during the acute stage, to vary the monotony of recumbency. Recumbency should be carried out by having the child lie upon its back upon a frame. The addition of traction to the legs and head is of benefit, and has hastened many recoveries by quieting muscular spasm and improving the position of the spine. It should be used in all cases of paralysis due to Pott's disease.

If apparatus is used, these points should be remembered: the position of the superincumbent weight should be as far back as possible; and the higher the backward pull comes, whether a jacket or brace is used, the less force is required.

Whether we wish to follow the best treatment or not may be a question, but it is the writer's belief that treatment by recumbency, so prevalent in the early days of orthopedic surgery, will come again to the front if the real value of supporting apparatus is studied.

ALIMENTARY REGIMEN IN SKIN DISEASE.

This question was raised in the past year, at the reunion of the British Medical Association, by Drs. ALLAN JAMIESON and WALTER G. SMITH. In their communications they made many noteworthy observations.

If anything approaching an exact account of the rôle played by diet in the cure of skin disease is to be given, it is necessary to study both its immediate and remote effects. As to the immediate possible effects of certain substances on the integument, almost all dermatologists are in accord. It is in reality a common conception that certain foods may, in a space of time varying from several minutes to forty-eight hours after their ingestion, provoke an eruption of urticaria, erythema, or acne. The latest researches published on these toxic effects confirm this idea.

There may be cited among foods capable of exciting immediate accidents in the skin, certain sea fish, such as goldfish, caranna, sardines, herring, mackerel, salmon, ray, etc.; shellfish, such as oysters not fresh, clams, crabs, smoked and preserved meats, forced meats, pork, etc.; salted and fermented cheese, which gives rise so often to eruptions of acne and folliculitis. The harmful rôle of the various alcoholic drinks, imported beers, acid wines and liquors, and coffee and tea, is not admitted by all physicians. It is probable that these substances act more especially after a length of time in which constant use has been made of them.

The articles of food just enumerated may have an immediate pathogenetic action in themselves, determining a true acute intoxication of the economy or provoking gastric or intestinal disturbances which react on the whole organism; or finally, as W. G. Smith says, by the elimination through the skin of the irritant substances. It is easy to see, then, that the methods of preparation of food must also enter into the discussion. Certain persons cannot take butter, especially if rancid or adulterated; others, fat; others, oil; some are unable to bear spices; others, rare meats, etc. Further, when the immediate effects of alimentation on the organism are in question, it is necessary to take note of the slightest individual susceptibility. There are persons who can eat game with impunity but who have urticaria when they undertake veal, turkey, or eggs.

Individual susceptibilities are often so exquisite that the slightest particle only of the offending substance suffices to provoke the eruption. There is mentioned a person who could not eat from a dish in the sauce of which there had been one or two mussels, without being seized with serious symptoms of intoxication; at the end of fifteen to twenty minutes she had flushings, cold sweats, loss of consciousness, then vomiting and urticaria.

It is evidently not logical to interdict to a given subject all the food products which *may* occasion an eruption in him. He must make a study of his own susceptibilities, and remove little by little from his dietary all the substances he knows will be harmful to him, and these alone. Individual susceptibilities may, moreover, be modified with age.

The problem is more difficult when disorders are to be studied which an alimentary substance in frequent use may produce in the organism at a time remote from its ingestion. When it is forbidden to the patient, he invariably answers that he knows it does him no harm because, having partaken of it that day or the day previous, he has not felt any ill-effect; and many dermatologists regard the alleged remote action on the skin as a

prejudice, a relic of ancient medical superstitions. Until exact laboratory experiments have demonstrated the fact, we cannot admit it. Nevertheless, it must be observed that the kind of alimentation influences remotely in a most evident way the skin and hair of animals, as numerous experiments have proved. Scurvy also develops late in subjects deprived of fresh vegetable diet, and pellagra seems to be produced especially in the train of defective nourishment.

The question of the injury done to the skin by certain foods used habitually recurs to this—whether slow, gradual accumulation of toxic principles in the economy predisposes to certain dermatoses. It can be asserted positively, in accordance with numerous facts of common observation, that not a few eruptions are external indications of general conditions whose most frequent and least harmful manifestations are known at the present time in France under the names of *arthritisme* and *nervosisme*. Certainly, the subjects may inherit from their parents various temperaments, a tendency to asthma, renal or biliary lithiasis, migraine, visceral neuralgias, etc., gout, eruptions of a lichenified eczematous type—in a word, the diseases of faulty nutrition (arthritisme). Or they may have inherited a nervous impressionability (nervosisme). Still, there is no doubt that these various morbid states may be entirely acquired, or at least exaggerated, in patients predisposed by heredity.

If alimentation sins on the side of excess, of insufficiency, of poor quality of the ingesta, of non-adaptation to the locality and climate in which the person lives, whether the food be badly digested or imperfectly elaborated in the organism, or whether the excretory functions (lungs, skin, kidneys) be vitiated in their action, there accumulate little by little in the liquids and organs of the economy various excrementitious products more or less toxic which remotely impress on the organism a vital depreciation and a morbid vulnerability. We know that individuals having a dietary too substantial for the work they do, using besides alcohol, coffee, tea, kola, cocoa, leading a sedentary life in the great cities, taking no exercise, and having none of the oxygen of the fields to consume the offending products, little by little acquire gout; this is the popular idea. How is it possible to say that the skin is the only tissue in the body which escapes a general intoxication? There is often seen in gouty subjects, either hereditary or acquired, cutaneons manifestations in the shape of a bullous or erysipelatoid eczema, or resembling lichenified eczema or chronic circumscribed neuro-gouty crises. It is therefore not illogical to believe that habitual bad feeding may not be foreign to the development of these eruptions.

The same is true of nervous excitability. It may without doubt be hereditary; often also it is acquired, or at least the hereditary predisposition is developed in a remarkable way under the influence of certain causes, such as the surroundings, cares, dwellings in great cities; but it is often necessary to implicate certain chronic intoxications, such as those of alcohol, tea, coffee, cocaine, and kola. For several years, in the polyclinic of La Rochefoucauld, have been sought the antecedents of coffeeism in patients who came for consultation as to pruriginous dermatoses. We found them constantly.

It appears logical to counsel eczematous arthritics to follow a suitable regimen in order to escape from eruptive attacks; they should abstain from coffee, tea, liquors, wines, alcoholic drinks, heavy meats, berries, tomatoes; their diet should include most green vegetables. Neuropathic subjects attacked by a pruriginous dermatosis should avoid coffee, tea, alcohol, kola, cocoa, and highly seasoned foods. Patients with pustular acne should not eat cheese, preserved meat, or fish. Those who have rosacea must avoid alcoholics.

Further, when the subjects are threatened with a disease attack, various foods may play in them the rôle of occasional cause and have an immediate pathogenic effect; they may at the time exercise an immediately baneful influence, provoke an attack, or cause a distant outbreak.

It is not necessary for the physician to apply blindly the rules just enunciated. They must often be modified, and it is this which dermatologists occupied with this question appear not fully to have understood.

If an eczematous arthritic, accustomed to the sedentary life of cities, is taken to the country and made to exercise in the open air, he can, without inconvenience, modify his diet and take alcohol, coffee, and tea, provided he does so only in a quantity proportional to the physical excercise undergone. An inhabitant of the country, mountain, or seaside, has no need to follow the same rigorous regimen as an office employé in a city.

Again, fresh food consumed on the spot may be harmless, while it becomes injurious

when transported to a distance. This often happens in the case of fish and crustacea, which certain people may eat with impunity at the seaside and cannot endure when found in the interior. A resident of the North, in whom a nervous impressionability does not exist, who needs substantial nourishment to resist the action of cold, who consequently must consume a great deal to produce heat enough, eats with impunity what would intoxicate in a few weeks in a temperate climate. Smoked sausages, preserved fish, tea, coffee and alcohol are tolerated in a wonderful way by his organism and have no effect on his skin.

The Scandinavian, Anglo-Saxon and Germanic races are by their constitution and the climate of their countries freed from a majority of the inconveniences of diet. The Latin, Oriental and Jewish races have, on the contrary, in this regard the greatest susceptibility. If an individual makes a change of climate, he should modify his diet. Going into a colder country, he may consume without inconvenience food and drink which he could not endure in his own country. Changing to a warm climate, he should have a more frugal dietary and abstain totally from alcohol.

There can be, then, no line of invariable conduct: dietetic prescriptions must vary according to (1) the race, the nationality of the patient; (2) the country he inhabits; (3) his heredity and morbid predispositions; (4) the state of his organs; (5) his mode of life, and the place in which he lives —city, country, mountain, or seashore; (6) and especially according to the skin disease from which he suffers, for all cutaneous affections are not benefited by the same dietetic prescriptions. — *Journal of Cutaneous and Genito-Urinary Diseases*, March, 1896.

INTRA-VENOUS INJECTION OF NORMAL SALINE SOLUTION.

BERRIN (*Revue de Chir.*, 1896, No. 1) reports a case of complicated hysterectomy in which life was apparently saved by the intravenous injection of three pints of artificial serum. The operation was performed by Pozzi, and finished without difficulty. The same evening the patient was extremely nervous, and the next day vomited unceasingly. The pulse became rapid, and there was loss of control over the rectum and bladder. Symptoms of collapse rapidly developed. A little over a pint of artificial serum was injected in ten minutes; then not quite a quart in fifteen minutes. Recovery was prompt.

Bouilly holds that the curative effect of these serum injections in cases of septicemia, and particularly in acute peritoneal septicemia, is sometimes astonishing.

Monod states that he has several times in his service injected quantities equal to those employed by Berrin and Michaux. He constantly employs serum in practically the same dose in cases of grave septicemia. He observed a few complications. One patient who had received a little less than a quart of serum was taken with violent vomiting.

Peyrot speaks favorably of these intravenous injections.

Terrier holds that whether the injections be employed intravenously or subcutaneously, their effect is the same. There is yet proof wanting to show that they are able to arrest an acute septicemic process, although the method is distinctly rational.

Segond has for four years employed the subcutaneous serum injections, from two to three quarts being used. The results obtained were perfectly satisfactory.

Poirrier holds that these injections reestablish the functions of the kidneys, the salivary glands, and the excretory organs.

Ange had in his service a young man who, as the result of a horse's kick, developed grave septicemia. For four or five days intra-venous injections of artificial serum were employed in doses of twelve to fifteen pints in twenty-four hours. The patient recovered because of these injections.

PAN-HYSTERECTOMY FOR MYOMA.

MR. CHRISTOPHER MARTIN, in the *Edinburgh Medical Journal* for March, 1896, compares pan-hysterectomy for myoma with some of the rival operations, supporting his views with the reports of eight of his own cases.

Removal of the uterine appendages is a comparatively safe operation for small myomata (less, say, than a five months' pregnancy); he has found it risky and unsatisfactory in cases of large myomata. He has removed the appendages twenty times for small myomata, with one death, and eight times for large myomata, with two deaths. In about ninety per cent. of those who recover, a cure results—menstruation ceases, and the tumor shrinks. But in the remaining ten per cent. the patient is not cured, the floodings con-

tinue, the tumor grows, presses on bladder and rectum, and renders the patient's life a burden to her. It is these failures that shake one's faith in the advisability of removing the appendages for myoma, and lead one to search for some more excellent way. He thinks that small myomata should be treated by vaginal hysterectomy, and large myomata by abdominal pan-hysterectomy.

For the treatment of large myomata, hysterectomy with extra-peritoneal treatment of the pedicle (clamp cases) is the favorite operation with most surgeons. To this method there are numerous and obvious objections. It is very risky, being attended by a mortality of fifteen to thirty per cent. The patients that do not die escape by the skin of their teeth; they have an offensive necrosing stump, sometimes as thick as the wrist, filling the lower portion of the wound and slowly sloughing off; they run the gauntlet of septicemia, peritonitis, and secondary hemorrhage; when the stump separates, a huge suppurating chasm is often left going down to the peritoneum, and separated only by a weak barrier of granulation tissue from coils of intestine. The wound is slow in healing, and it is usually from four to eight weeks before the patient may even sit up in bed. There is great danger, after these clamp cases, of a ventral hernia forming at the lower end of the wound. In cases where the myoma invades the broad ligament or the cervix it is often almost impossible to get a safe pedicle when the clamp is used.

In all these points pan-hysterectomy is superior to the clamp operation. It cures the patient, it is much less risky, the abdominal wound heals by first intention, the patient is up within three weeks, and there is but little risk of subsequent hernia. The author has vowed never to use a clamp again.

Hysterectomy with intra-peritoneal treatment of the pedicle, and abdominal myomectomy, seem to be attended with such great risks (internal hemorrhage, suppuration of the stump, peritonitis, and septicemia) that they are more dangerous even than the clamp operation, whilst they offer no advantages that are not better secured by pan-hysterectomy.

Vaginal hysterectomy for small myomata compares favorably, as regards mortality, even with removal of the appendages, whilst, of course, it offers an absolute cure. It is not advisable, however, in cases where the tumor is larger than the fetal head.

Enucleation *per vaginam* is usually a risky operation, except for small submucous tumors to which access is easy. It is justifiable in cases of large sloughing submucous myomata. In other cases, however, pan-hysterectomy seems to be a sounder and safer operation.

To briefly sum up the advantages of pan-hysterectomy: It absolutely cures the patient. It has a lower mortality than the clamp operation, than enucleation, and than the intra-peritoneal method of treating the pedicle. It is attended by but little shock, and the convalescence is easy and uneventful. The wound heals by first intention, the patient is up in about three weeks, and there is a very slight risk of the subsequent formation of a ventral hernia.

A NEW SERUM FOR THE TREATMENT OF INFECTIOUS DISEASES.

Rekowski (quoted by the *Journal of Cutaneous and Genito-Urinary Diseases*, March, 1896) states that antitoxin contained in the blood-serum of an animal into which bacterial toxins of diphtheria or tetanus have been injected is the product of a special irritation of the cell molecules by the toxins. But this special irritation can be brought about, not only by toxins, but also by some chemical substances, and in that supposition lies the explanation of the well known clinical properties of mercury, salicylate of sodium, and quinine, in syphilis, acute rheumatism, and malaria. Acting upon this theory, the author injected into a horse once a week and afterward twice a week thirty centigrammes of the following emulsion of mercury:

Hydrarg. salicyl., 1 Gm.;
Vaselin. liquidi, 10 Cc.
M. et ft. emulsio.

In the blood-serum of the animal very slight traces of mercury could be found.

He injected ten cubic centimeters of the blood-serum every three days in the glutei of patients affected with secondary and tertiary symptoms. The gummata disappeared and open sores healed after three or four injections. The same results were obtained by Drs. Hizyn and Wreden (Kiew).

The author gave a horse thirty centigrammes of arsenic per day (forty-five grammes in all). In the blood, hardly noticeable traces of arsenic could be discovered. He injected ten cubic centimeters of the blood-serum of that horse twice a week into two patients afflicted with cancer of the face, and after six weeks noticed a remarkable improvement.

TREATMENT OF CHILBLAINS.

The following formula is recommended by C. BOECK as being efficacious in cases of chilblains:

Ichthyol,
Resorcin,
Tannin, of each, 15 grains;
Water, 75 grains.
To be rubbed on the affected parts every night.

In a few minutes it forms a varnish on the skin, and under its influence not only do the chilblains disappear, but also the diffuse edematous swellings of the hands and fingers.

The drawback to this preparation is that it blackens the skin during treatment and for eight or fifteen days afterwards. In the case of people whose occupations forbid them soiling their hands, resorcin may still be employed in the following manner:

Resorcin, 30 grains;
Mucilage of gum arabic,
Water, of each, 75 grains;
Powder of talc, 15 grains.
To be rubbed on at night.

The following is recommended for the relief of stings of insects:

Solution of ammonia, 10 parts;
Collodion, 5 parts;
Salicylic acid, 1 part.

—*The Lancet* (London), March 7, 1896.

Reviews.

THE MEDICAL ANNUAL AND PRACTITIONERS' INDEX. THE INTERNATIONAL MEDICAL ANNUAL. A Work of Reference for Medical Practitioners.
John Wright & Co., Bristol, Eng. E. B. Treat & Co., New York. 1896.

This very valuable Medical Annual now appears for the fourteenth time, as a record of medical and surgical progress during the past year. It is truly international in scope, in that literature from the entire medical world is gathered together within its binding, and the various gentlemen who have contributed summaries to it are almost equally distributed between Great Britain and America. Of the English contributors whose names are most noteworthy we find Hancourt Barnes, both the Fenwicks, Harley, More Madden, Thorburn, and Williams; and among the American contributors G. E. de Schweinitz, William Osler, Theophilus Parvin, and Bransford Lewis.

The present volume opens with a brief therapeutic review by the editor of the THERAPEUTIC GAZETTE, followed by a number of pages devoted to a consideration of new remedies, each individual article being contributed by some well known physician. Following the chapter on "New Remedies" there is a timely one upon "Malaria and How to Observe the Parasite of this Disease," by George Thin, the article being illustrated with a number of chromo-lithographs. Following this is an article upon "Toothache and Neuralgia;" one upon the remedial value of "Cycling;" and another still by Mr. Thorburn upon the "Sensory Distribution of Spinal Nerve Roots," which is accompanied by six chromo-lithographs illustrating the areas of distribution of sensory nerves according to the studies of Thorburn, Starr, and Head. An article of about twenty-five pages then follows, upon "Angeio-neurosis," to which is appended a very copious bibliography. Dr. de Havilland Hall follows with a brief article upon "Life Insurance." The rest of the volume is made up of scattered contributions of interesting papers, many of which are contributed by the authors whom we have already named.

A noteworthy fact in connection with this issue is the great number of illustrations which accompany the text, many of which are colored and all of which are unusually clear and well executed. Towards the close of the volume is a brief article upon the use of the Roentgen Rays, and the book closes with sections upon Sanitary Science, upon the Progress of Pharmacy, and a description of a large number of surgical instruments and other appliances which are constantly employed by physicians. There is also a list of the books of the year, which, however, is not complete.

It is therefore evident that the International Medical Annual is a reliable and most useful guide for every practicing physician, whether he be a general practitioner or a specialist, and we can cordially recommend it with the knowledge that it will bring to him aid in his every-day work.

TWENTIETH CENTURY PRACTICE: AN INTERNATIONAL ENCYCLOPEDIA OF MODERN MEDICAL SCIENCE. Edited by Thomas L. Stedman, M.D. In twenty volumes. Vol. V: Diseases of the Skin.
New York: William Wood & Co., 1896.

In a recent number of the THERAPEUTIC GAZETTE we reviewed Vol. VI of this encyclopedic work, Vol. V being detained, as we then stated, by circumstances beyond the control of the publishers. We therefore look with interest at this volume, devoted as it is to a single specialty in medicine. It contains a little over 900 pages, including the index, and is composed of the writings of eleven

well known dermatologists. In this list appear the names of such well known authors as Crocker of London, Van Harlingen of Philadelphia, Hyde of Chicago, Bulkley of New York, Kaposi of Vienna, and Brocq of Paris.

The volume contains a chapter upon the Anatomy of the Skin and its Appendages, and others upon Parasitic Diseases, Erythematous Affections, Eczema and Dermatitis, Squamous Affections, Papular, Bullous, Pustular and Ulcerative Affections, Diseases of the Sebaceous Glands, of the Sweat Glands, of the Hair and Nails, Neoplasms and Dermatoneuroses.

In the chapter by Dr. Hyde we find, under Treatment of Acute Eczema, the following dusting powder advised:

℞ Powdered starch, 1 ounce;
Powdered zinc oxide, 2 drachms;
Powdered camphor, ½ drachm.

To be made into an impalpable powder and employed for external use.

In other instances black wash reduced to one-half strength is employed, and the skin is then gently massaged with the finger which has been smeared with zinc-oxide ointment. In some instances ointments, however, cannot be borne. A useful soothing application may be employed in the following prescription:

℞ Oxide of bismuth, 1 drachm;
Oleic acid, 1 ounce;
White wax, 3 drachms;
Vaselin, 9 drachms;
Oil of rose, 2 minims.

For chronic eczema the following prescriptions are suggested as more stimulating:

℞ Picis liquid., 1 drachm;
Glycerin., 1 drachm;
Spts. vin. rectif., 6 drachms;
Ol. amygd. amar., 15 minims.
M. Sig.: For external use. (Duhring.)

Or,

℞ Ol. rusci (vel picis liquid.), 4 ounces;
Adipis, 1 ounce;
Ol. oliv., ½ ounce.
Misce et adde:
Terebinth. canadens.,
Sulphur. flor., of each, 1 ounce.
Sig.: To be employed two or three times daily with a brush.

Another is:

℞ Picis liquid., 1 to 2 ounces;
Sapon. virid., 1 to 3 ounces;
Glycerin., 1 ounce;
Spts. vin. rect., 8 ounces;
Ol. rosmarin., ½ drachm.
M. Sig.: To be rubbed into the skin with a flannel rag.

The liquor picis alkalinus combines the caustic potash with tar, and is valuable because miscible with water in all proportions:

℞ Picis liquid., 2 drachms;
Potass. caustic, 1 drachm;
Aq. dest., 5 ounces.
M. Dissolve the potash in the water, and add the tar slowly in a mortar with friction. (Bulkley.)

One to two drachms of this solution may be added to a pint of water as a lotion; and the same strength may be employed for unguents.

We have given these prescriptions and abstracts from the table of contents of the volume with the object of giving our readers a general idea of the scientific scope and practical utility of the fifth volume of this work, to which we have already on previous occasions referred in terms of praise, and although this individual number of the series is purely dermatological it very distinctly maintains, if it does not improve upon, the record already made by its predecessors.

NEW TRUTHS IN OPHTHALMOLOGY. By G. C. Savage, M.D. Fifty-eight illustrations. Third edition. Published by the Author.
Printed at the Publishing House of the M. E. Church South, Nashville, Tenn., 1896.

When the first edition of Dr. Savage's book appeared, it was noticed in the columns of the GAZETTE, the earnestness of the author strongly commended, and all ophthalmologists advised to purchase the volume and carefully read it. The same recommendation applies to the present edition, which has been considerably enlarged, chiefly to give place to the criticisms which Eaton, Hotz and Wilson have promulgated with reference to Dr. Savage's views on oblique astigmatism and the oblique muscles. As he leaves "to the impartial judgment of the readers the decision as to the truthfulness of what he has taught on these subjects," the reviewer can do no better than add the suggestion that they should follow this advice, because, although Dr. Savage has not succeeded in convincing many of his colleagues that he is right, he certainly deserves careful perusal of what he has written.

Sometimes his anxiety to impress upon the reader the value of his own methods leads him to assertions that are utterly unfounded in fact. For example, after criticising the Dyer method, or, rather, a modification of the Dyer method, for increasing the relative range of convergence, he states: "It is the object of this paper to show that the plan is unsound in principle and must necessarily be

unsuccessful in practice." Inasmuch as it is neither unsound in principle nor unsuccessful in practice, as numbers of much-relieved patients will cheerfully testify, this quotation from Dr. Savage is certainly not a new truth in ophthalmology.

The title of the book is not altogether fortunate, as has been pointed out in previous reviews. To be sure, some of the investigations, particularly those with reference to the oblique muscles, are distinctly original; others are not. This is notably the case with reference to some of the operative procedures, the one, for example, of making an artificial pupil through the centre of a soft cataract being a time-worn procedure.

One sentence in Dr. Savage's book deserves widespread prominence, and we thank him for the words: "The unscientific cry of honest but misguided oculists against the use of the mydriatic is, to the ear of the quack spectacle-vender, a sweet sound which he attunes to his own profit and to the detriment of the unsuspecting public. May it soon be heard no more in the land!" G. E. DE S.

WOOD'S MEDICAL HAND ATLASES. NERVOUS DISEASES. By Christfried Jacob. With an Introduction by Professor Strümpel. Translated and edited by Joseph Collins, M.D.
New York: William Wood & Co., 1896.

The object of this volume is to portray, by means of a series of colored plates, the anatomy and physiology of the nervous system of the brain and spinal cord. As a result the volume is composed almost entirely of colored or engraved plates devoted to this purpose, each of which is accompanied on the opposite page by explanatory notes. Dr. Collins has done his work unusually well, for the very concentration of the text must have rendered its translation exceedingly difficult.

The first plate we find on opening the volume is one which is designed to represent the brain after removal of the skull-cap and the various covering membranes, and by lifting superimposed sheets we pass down through the cortex to the white substance and get a clear view of the corpus callosum and the lateral ventricles. This is the only superimposed illustration in the volume, but the free use of colors permits the different tracts in the nervous system to be clearly followed by the eye. Only in a few instances is the text involved.

This volume closes with chapters upon Special Pathology and Therapy, but it lacks an index which would have rendered its value very much greater.

Correspondence.

LONDON LETTER.

By ST. CLAIR THOMSON, M.D. Lond., F.R.C.S. Eng., M.R.C.P. Lond.

At its annual meeting last night the Pathological Society decided, by forty-three votes against twenty-three, that it would not admit women to its membership. So the medical profession in England continues to show its oneness with the populace in that it is swayed by prejudice and class interest, and no more influenced by any sense of justice or "sweet reasonableness" than a trades-union of tailors. Even putting aside these notions, which may lay themselves open to the charge of being highfalutin ones, it is curious to see how ready a body of scientific men is to stultify itself, and how pachydermatous it can be to the criticisms which are sure to be leveled at it by unbiased critics. The medical profession in this country has agreed to the admission of women to its ranks through the portals of the examination halls; it has accepted them as members of the British Medical Association, where they can be present and take part in the work of the various sections; they are permitted to belong to the Anatomical Society and to the Society of Anesthetists; and yet those members of the profession who belong to the Pathological Society see nothing incongruous in opposing the admission of female physicians among them. Some of them, indeed, were at least satisfactorily frank in stating their motives as undisguisedly low ones—they got on very well without women, they said, and saw no reason why they should trouble themselves to admit them! Others trotted out the well worn and now nearly threadbare arguments. Many gave good ground for the charge of prudery which is often enough leveled against us: they maintained that the freedom of debate would be hampered by the presence of female physicians! Medical men who cannot discuss a scientific subject without entertaining even the suspicion of such a prurient idea may be commended to a study of the national motto which they have evidently neglected—*Honi soit qui mal y pense.*

On the fourteenth of this month, exactly a hundred years had elapsed since Edward Jenner performed his first vaccination on the person of James Phipps, then eight years old. We have been reading of how this great centenary has been celebrated in the United

States, in Germany, and in Russia. In Berlin a banquet, presided over by Professor Virchow, amongst other festivals, marked the event. We read that in the States the meetings of the American Medical Association and the American Public Health Association have given special prominence to the celebration. Here the event has been passed over in almost complete apathy. Of course the Government took no notice; we are only too proud of our emancipation from our grandmother, the State. But our Royal Colleges and Universities, who are not so backward in welcoming foreign celebrities, appeared to have forgotten that there was ever such an individual as Jenner; and indeed many of the profession would doubtless have never heard of the centenary had not *The Practitioner* come out in a special "Vaccination Number." This latter possibly appealed to us as a practical people, because it placed in the hands of all its readers the weapons of fact and argument wherewith to meet and overwhelm the faddists yclept "anti-vaccinators." Still, perhaps the most striking celebration is the outbreak of smallpox in the unvaccinated town of Gloucester; and then, is it not written that a prophet is not without honor save in his own country?

Echoes are still heard of the *cause célèbre* of Kitson *vs.* Playfair. These are chiefly in the way of comments in the lay journals on the subject of professional secrecy and medical etiquette. The case has also led to a realization of the fact that there is no exact law and no definite ruling as to how much a medical man may be called on to reveal in a court of law of what he has heard in the secrecy of the sick-room. In France and in most of the United States the code is most explicit on this point; here we are in the hands of the individual judge who may try the case. The lay press appears to be almost unanimous in condemning the profession for upholding the proposition that a professional man may even use the information which he may have obtained in private for the protection of his own family, if in doing so he in any way injures the client who has trusted to his confidence. I wrote last month that Dr. Playfair had appealed against the verdict. It is a satisfaction to know that the case has been settled out of court. Of course no details have been made public, but report has it that the amount agreed to was $46,000, to include the costs incurred by Mrs. Kitson.

It is usual on the Queen's birthday—which has just been celebrated—to publish a list of those conspicuous citizens whom the Crown delights to honor with various titles or other tokens of esteem. This year's list is chiefly conspicuous for the entire absence from it of any medical man or representative of science. Literature has received some acknowledgment in the person of Max Müller, a professor at Oxford and by birth a German. Rumor had it that Sir Joseph Lister was to have been raised to the peerage—not because of his work in surgery, which has saved more lives than any be-medaled soldier has ever destroyed, but because he is this year the President of the British Association. However, he remains more distinguished as he is. Such action on the part of the State receives its best comment in a recent work on "Democracy and Liberty" by Professor Lecky. This scholarly and philosophic historian thus refers to the subject:

> In 1896 for the first time a peerage was conferred on an English artist. The doors of the Upper House were never opened to the men who in this century have rendered the greatest services to the State and to humanity —to Simpson, whose discovery of chloroform has prevented an amount of human suffering which it would need the imagination of a Dante to realize; to Stephenson, whose engineering genius has done more than that of any other man to revolutionize the whole economical and industrial condition of England; to Chadwick, the father of the great movement of sanitary reform which has already saved more lives than any, except perhaps the very greatest, conquerors have destroyed; to Darwin, who has transformed our conceptions of the universe and whose influence is felt to the farthest frontiers of speculative thought. For their own sakes it is not to be regretted that the claims of such men were not thrown into humiliating competition with those of the acute lawyers and politicians, the great country gentlemen and the opulent brewers, who throng the approaches of the Upper House; but if such a House is to continue, and in a democratic age is to retain its weight and influence in the State, it is not likely that elements of this kind can for ever be neglected.

While referring to the writing of a man whose business is to weigh and appreciate the respective values of works for the public good, let me give the following quotation: "The great work of sanitary reform," says Mr. Lecky, "has been perhaps the noblest achievement of our age, and, if measured by the suffering it has diminished, has probably done far more for the real happiness of mankind than all the many questions which make and unmake Ministries."

I cannot refrain from giving in conclusion from this same work on "Democracy and Liberty" an appreciation of our profession by an author who is a man of public affairs as well as a man of letters:

> Closely akin to science, and perhaps even more important among the elements of national well-being, are

the great healing professions. Here, too, our century ranks among the most illustrious in the history of the world. It has seen the discovery of anesthetics, which is one of the greatest boons ever bestowed upon suffering humanity. It has produced the germ theory of disease, the antiseptic treatment in surgery, a method of removing ovarian tumors which has successfully combated one of the most terrible and most deadly of diseases, a method of brain surgery which has already achieved much, and which promises inestimable progress in the future. It has vastly extended our knowledge of disease, by the invention of the stethoscope, the clinical thermometer, the laryngoscope, the ophthalmoscope, and in many other ways which it is not here necessary to enumerate England may justly claim a foremost place in this noble work, and many of her finest intellects have been enlisted in its service. In no single instance has this kind of eminence been recognized by a peerage. It is clearly understood that another and lower dignity is the stamp of honor which the State accords to the very highest eminence in medicine and surgery, as if to show in the clearest light how inferior in its eyes are the professions which do most to mitigate the great sum of human agony to the professions which talk and quarrel and kill.

An addition to the small band of medical men in the House of Commons has just been made by the election of Sir William Priestley as representative of the Universities of Edinburgh and St. Andrews. He is a grand-nephew of Joseph Priestley, the celebrated chemist and discoverer of oxygen, who was a contemporary of Burke and who died in Pennsylvania on the 6th of February, 1804. Sir William Priestley is a fashionable practitioner in the West End, and formerly held the chair of midwifery in King's College now filled by Dr. Playfair.

The profession in this country has lost its oldest representative by the death of Mr. Salmon at the great age of 106. He qualified in 1809, and went over to help with our wounded in Belgium after the battle of Waterloo. He is said to have been the oldest Free Mason in the world.

There is a melancholy interest attached to the portrait of one of our oldest physicians which is hung in this year's Academy. I refer to that of Sir Richard Quain, M.D., by the President of the Royal Academy, Sir John Millais. The painter is now lying stricken with malignant disease of the larynx, and Sir Richard Quain is his attending physician. I hear that a diagnosis was made more than a year ago, and a radical operation by laryngo-fissure proposed; this was declined, and last week tracheotomy had to be performed in haste for a sudden access of dyspnea. Sir John Millais has always been a great pipe-smoker, but devotees of tobacco will be relieved to hear that a study of the most recent statistics of laryngeal cancer fails to show that smokers are any more subject to the affection than those who abstain from the habit.

The great increase in the consumption of tobacco, especially amongst growing lads, cannot fail to have its due effect on the development of both mind and body. The net revenue yielded last year by the tax on tobacco amounted to fifty-two and a half millions of dollars, this being in excess of the sum yielded from the same source during the preceding year by more than a million and a half. The excess is mainly attributed, by the Chancellor of the Exchequer, to the increase in the consumption of cigarettes. Another point revealed by the Budget is the increase in the consumption of tea, ten million more pounds having been consumed during the past than in the previous year. That we are not necessarily becoming a more temperate nation is shown by the fact that in 1895 no less than 1,200,000 extra bottles of champagne were drunk. As usual, with returning prosperity the first rush is to the whiskey-bottle and the decanter, and the increase in the consumption of the lighter wines and of tea does not redeem the outlook as regards the national health.

Still the belief that London is the healthiest of the large cities of the world appears to be well grounded. The death-rate last year was 19.7, and in 1894 it sank to 17.7, which is almost a record when we consider that the late Dr. Parkes fixed an average of 17 per 1000 as "the mortality incident to human nature." But even this would be much improved on if we could remove certain plague-spots in our midst which quite minimize the record of the healthier quarters. Thus, for instance, a parish on the south side of the river with a death-rate of 25.6 entirely neutralizes the average attained by the district of Hampstead, viz., 12 per 1000 per annum.

The value of diuretin has lately been put to the test, and from the published results it appears that when the kidney affection is primary and well established—that is, when the deep parts of the organ are affected, as in the parenchymatous form of acute nephritis —and when there is much albumin present, diuretin is of little or no value, while in those cases in which the kidney trouble is secondary to morbid lesions in other organs and the epithelial layer of the urinary tubules is the seat of the disease, this diuretic is a valuable therapeutic agent.

The following is recommended as an excellent diuretic in cardiac affections, by the Paris correspondent of one of our journals:

Theobromine, gr. x;
Powdered digitalis, gr. j;
Camphor, gr. ij;
Calomel, gr. j.

S.: In a capsule. Four to be taken daily.

A typical case of acromegaly has, after a carefully observed trial, failed to be benefited by pituitary extract. The failure to ameliorate the symptoms is somewhat in favor of the view that the cause of the disease is perverted and not suppressed or exaggerated functional activity of the gland. Certain questions await answers before encouragement is given to further trial of the extract. We want to know if there is any relation between the thyroid gland and the pituitary body, also what the relation is between these two bodies and the nervous system, before we can make very definite progress. In many recorded post-mortem examinations the thyroid gland as well as the pituitary body has been described as diseased. Dr. Bonardi found no tumor of the pituitary body, but atrophy and sclerosis of the thyroid gland, in a case examined by him.

A short time ago I announced that the knell of the time-honored gargle had been sounded. The bronchitis-kettle is now reeling on the pedestal (*i.e.*, hob) where it has reposed for ages, and the reputation of the poultice in lung affections has been rudely shaken. Dr. de Havilland Hall pleads for a little consideration for the unfortunate victim of bronchitis who is kept in one room with the atmosphere saturated with moisture from a kettle, enveloped in huge flaxseed poultices, and crowded with nourishment every hour or so. As Sir Benjamin Richardson has remarked, it is not inaptly that the supplier of moisture has been called a "bronchitis-kettle," for if the patient does not already suffer from that affection he soon will. Indeed, both in bronchitis and pneumonia too great stress cannot be laid on the importance of a free supply of fresh air, and this cannot usually be attained if the bronchitis-kettle is at work. As regards poultices, they are condemned as of no use in chest affections, except possibly for the relief of pain. To watch a small child with extensive broncho-pneumonia fighting for breath, and then to further hamper its efforts by ordering poultices weighing about a pound, seems hardly a scientific procedure. In order not to fly too directly in the face of popular prejudice, it is suggested that the poultice might be replaced by a light jacket of cotton-wool, over which some stimulating liniment might be sprinkled.

At a recent meeting of the Medical Society a paper was read by Dr. McLane Hamilton, of New York, on "The Connection of Autotoxis with Certain Common Forms of Insanity." Dr. Haig did not allow the opportunity to pass of expressing his view that it is the excess of uric acid in the blood which causes the intestinal putrefaction, which he thus regards as a secondary and not a primary factor. Calomel, he says, is an efficient agent in clearing the blood of uric acid, and salicylate does the same; moreover, patients can be cured by altering the diet alone, without recourse being had to intestinal antiseptics. Dr. Hamilton, however, found other supporters, who held that there was no doubt that such a common matter as a delay of the action of the bowels would produce headache, dullness, and depression of spirits in many people otherwise normal.

PARIS LETTER.

By Arthur R. Turner, M.D. (Paris).

During the fourth session of the Obstetrical Society of France, which was held in Paris from the 9th to the 11th of April, the question of the anti-streptococcic serum made by Dr. Marmorek, of the Pasteur Institute, was discussed. Dr. Charpentier, the eminent obstetric physician, stated that he had been able to collect the observations of forty cases of puerperal infection treated by the serum, many of which had occurred in the practice of well known accoucheurs, such as Drs. Budin, Porak, Maygrier, etc. The forty cases thus treated had given seventeen deaths, twenty-two recoveries, and one doubtful case, the mortality amounting thus to 42.5 per cent., or, after subtraction of the doubtful case and of five cases treated *in extremis*, a mortality of 35.29 per cent. Bacteriological examination was carried out in twenty-five of the cases, revealing in sixteen cases the presence of streptococci unassociated with other bacteria, and in the remaining nine cases the streptococcus associated with either staphylococci or the *Bacterium coli commune*. Intrauterine treatment was simultaneously employed. In several of the cases erythema, urticaria and other similar complications occurred. Such complications, however, are not what is most serious in the results obtained, but the high rate of mortality noted.

At the same meeting Drs. Bar and Tissier spoke at length on their own experience with the anti-streptococcic serums of Marmorek

and of Charrin and Roger. All deductions for treatment *in extremis* and for absence of bacteriological examination having been made, they had with the first serum six deaths out of thirteen cases, and with the second serum four deaths out of five cases. At the beginning of the researches they followed the advice given by Roux and Marmorek, to use no local treatment; however, later on they thought it their duty to resume such treatment. Complications such as erythema and abscesses were noted by these two observers. In their opinion the promises which had been made as to the efficacy of the serum had not been accomplished.

It may be said that the general opinion of all the speakers seemed to be against the present effective action of the serum, though it was thought that the method was correct —that sero-therapy was not to be attacked.

The publishers of one of the medical papers of Paris, *La Médecine Moderne*, who have not been long established, but who have displayed considerable enterprise nevertheless, undertook a few days ago something which, in Paris at least, is new. They hired a large shop almost opposite the School of Medicine on the Boulevard St. Germain, and transformed it into a reading-room free to all the physicians and medical students of Paris, to each of whom a card of admission was sent. The front part of the establishment opens directly on the street, and on one side contains notices of anything which might be interesting from a medical point of view, such as courses of lectures, etc.; the other side is devoted to the latest reports from various news agencies. In the rear of the establishment are found numerous desks, papers and ink, and a case containing several hundred medical papers from various parts of the world. The reading-room opens into a small garden where the visitor may smoke —one of those gardens which are found here and there in Paris hidden in behind the tall houses, and whose presence is revealed by no outward sign.

In one or two of my previous letters I called attention to the hostility displayed by a certain section of the French medical world towards foreigners practicing medicine in this country. A petition has just been presented by the internes of the Paris hospitals demanding that no one be allowed to practice in France without having passed not only the French medical examinations, but also the French baccalaureate, served in the French army, and become naturalized. How strong the feeling is may be judged from the fact that the petition was signed in the affirmative by almost all the internes, two hundred and eighteen having expressed themselves in its favor, and only eleven against it.

It has been customary on the frontiers to allow medical men to practice freely on both sides of the line, and a convention to that effect was signed with Luxembourg, Belgium, and Switzerland. In 1891, however, one of the medical syndicates began a campaign against such conventions, which has been carried on ever since. It is to be hoped that this feeling may disappear, and that other objects may occupy the thoughts of the physicians in France who have excited this movement. While undoubtedly nothing could legally affect foreign physicians already established here, their position could be rendered exceedingly disagreeable if they found a manifest hostility to their presence to exist on the part of their French colleagues.

Between the Seine and the Place Maubert, in Paris, on the left bank of the river, and not far from the Place St. Michel, there exists at the corner of the Rue de l'Hotel Colbert and the Rue de la Bûcherie, two very narrow and dirty streets, the old Faculty of Medicine, which was in use previous to the erection of the present school, and which dates back several hundred years. It is a small building, with a large entrance, through which can be seen the windows of what was the great amphitheatre, now converted into a laundry's washing-room. Another portion of the building is now a legalized house of prostitution. At a recent meeting the Municipal Council of Paris voted that the building should be purchased, and kept as a historic monument, thus rescuing it from the degradation into which it had fallen.

MANCHESTER LETTER.

By Robert B. Wild, M.D., M.Sc.

During the past few months a considerable amount of interest has been aroused in the question of the milk supply of this district. Dr. Ashby, the newly elected President of the Manchester Medical Society, took up the subject for his inaugural address in February, and pointed out that much of the milk supplied, not only to this city but also to other large towns, was unfit for use, especially in the case of children. In many specimens, after allowing the milk to settle, a deposit of dirt was easily obtained which on examina-

tion was shown to consist chiefly of organic matter and numerous micro-organisms. Dr. Ashby then touched upon the measures for the systematic control of the milk supply which have been adopted in some other countries, described at some length, as well worthy of imitation, the Walker-Gordon Laboratory at Boston and Philadelphia, and advocated the establishment of a similar institution in this city. He pointed out the great advantage, in the treatment of infants, of being able to control the relative proportions of casein, fat, and sugar in the food supplied, so as to meet the requirements of each particular case, and showed that by proper arrangement the prescribing of food could be rendered as simple and accurate as the prescribing of drugs.

The subject thus brought before the profession received an additional emphasis from a public lecture given by Dr. Niven, the Medical Officer of Health, upon the condition of some of the city dairies, and the unsatisfactory character of the milk supplied from them as regards cleanliness.

The dairymen were not slow to take up the cudgels in their own defense, and passed resolutions traversing the statements of Dr. Ashby and Dr. Niven. An animated newspaper correspondence ensued, and at any rate public interest is aroused in the question. Whether any practical steps will be taken to carry out Dr. Ashby's suggestion as to the establishment of a company on the lines of the Walker-Gordon Laboratory, still remains to be seen.

The question of the applicability of the Roentgen rays to medical and surgical purposes has excited great interest here as elsewhere. Professor Schuster gave an address to a special meeting of the Manchester Medical Society upon the medical and surgical aspects of Professor Roentgen's discovery, and illustrated it by a number of lantern-slides which had been taken in the Physical Laboratory of the Owens College. As a result of a suggestion made by Professor Schuster, the Medical Society has taken in hand—as a temporary experiment—the organization of a department for the utilization of the X rays for professional purposes. A guarantee fund has been raised among the members of the Society, and a properly qualified assistant has been engaged to devote himself to the work of experimental investigation under the supervision of Professor Schuster. A laboratory has been provided by the Owens College, and any practitioner is now able to have a patient skiagraphed on payment of a very moderate fee.

Some very interesting skiagraphs were reproduced in last month's *Medical Chronicle*, showing the hands of patients affected with rheumatoid arthritis, and advanced gout with copious uratic deposits. A prominent feature was the marked difference in the transparency to the Roentgen rays of the bony deposits of the rheumatoid arthritis and the uratic deposits of the gout, the former being opaque and the latter almost as transparent as the fleshy parts. Another interesting point was the much greater extent of the bone lesions than would have been supposed from the external appearance of the hands.

Dr. Thomas Harris recently showed a series of cases of myxedema treated by thyroid extract. One case was specially interesting in that the patient (who had suffered from gout three years previously) developed an acute attack of gout immediately he was put on the thyroid extract; this subsided when the drug was stopped, and reappeared on its subsequent administration. Dr. Harris thought that the thyroid extract, by producing increased metabolism, might account for the attack of gout, and suggested that the pains of the back and limbs usually present in myxedematous patients taking thyroid extract might be of a gouty nature.

A movement is on foot to institute a Central Medical Hall in Manchester which might be used by the various medical societies and form a centre for the professional life in this district, not only in its scientific but also in its ethical and social aspects. The chief obstacle at present is the great expense attending the provision of a suitable building in the central part of the city, where the value of land is very high. It is to be hoped that this difficulty in the way of the realization of a most desirable scheme will be overcome in the near future.

UTERINE HERNIA, AND A RAPID DELIVERY EFFECTED.

To the Editor of the THERAPEUTIC GAZETTE:

Some time ago I was engaged to attend Mrs. G, a multipara, in confinement. A history of previous prolonged and difficult labors was given me. Passing her home about thirty days prior to the expected confinement, I was called in to see her. She presented a very peculiar appearance. The abdomen was very much distended and pendulous. I placed her in a recumbent posi-

tion and on palpation found the abdominal walls very lax and thin; the fetus lying diagonally, the head in the right lumbar and breech in left iliac region. I had no difficulty in turning it. After placing it in proper position I instructed the patient to keep it in place, which she informs me she did, until pains came on at full term.

Believing from the history that I would have trouble in her delivery, I in the meantime prepared a bandage about twelve inches wide and of sufficient length, placing straps at one end and buckles at the other. When I arrived I found her in labor with breech presentation, the contractions seeming to cause no progress, the bulging of the abdomen indicating that there was no engagement in the parturient canal. I then put on my bandage and made it tight, and in about forty minutes delivered a ten-pound male child.

In her two previous confinements she had been from three to four days in labor.

I report this case at the suggestion of friends, and hope it may aid some fellow physician.

W. R. THOMPSON.

MOSS POINT, MISSISSIPPI.

Notes and Queries.

A BAD BILL FOR MEDICINE AND THE DISTRICT OF COLUMBIA.

MEMORIAL OF THE ASSOCIATION OF AMERICAN PHYSICIANS.

The Association of American Physicians, assembled in annual session at Washington, D. C., May 2, 1896, by unanimous vote and by the appended signatures of its officers and members, hereby records its most earnest protest against such legislation as that proposed by the bill entitled "A Bill for the Further Prevention of Cruelty to Animals in the District of Columbia"—Senate Bill 1552—in so far as this legislation embodies measures intended to control and restrict experimentation upon animals conducted in the Government laboratories, the medical schools and other institutions of the higher learning in the District of Columbia. In making this protest the Association begs to present to the members of Congress the following considerations:

Experimentation upon animals is an absolutely indispensable and the most important method of investigation of the properties of living organisms, and of the influences which modify these properties. The science and the art of medicine are based upon the knowledge of the structure and the functions of living matter, and consequently in large part upon knowledge which has been obtained by experiments upon animals and which could have been gained in no other way.

The benefits to mankind of the knowledge thus acquired are of inestimable value. To mention only a few of the results obtained within recent years by animal experimentation, attention is called to the discoveries which have revolutionized surgical practice by the introduction of antiseptic methods of treatment, which have rendered infrequent the occurrence of childbed fever, which have made it possible to prevent the development of hydrophobia after the bite of rabid animals, which have furnished an efficacious method of cure of the otherwise incurable disease, myxedema, and which, by the antitoxin treatment, have greatly lessened the fatality of diphtheria. By these and similar discoveries derived from experiments upon animals, untold thousands of human lives have been rescued which would otherwise surely have perished.

The saving of animal life itself and the consequent commercial profits resulting from knowledge gained by experiments upon animals have been enormous. The benefits derived from experiments upon animals largely go to the improvement of the public health and the prevention of infectious diseases. Their immediate value is often not recognizable by the individual, unless he has informed himself upon subjects which are in large measure of a technical nature and belong to the study of scientific experts.

It would require a volume to set forth adequately the results, beneficial to mankind and to animals, of knowledge derived from experiments on animals. The assertion of many opponents of vivisection, that knowledge obtained from animal experimentation and which could be obtained in no other way has been of little or no benefit to mankind, can be referred only to ignorance or to willful misrepresentation.

Never was there a time in which experimental medicine gave promise of results so important for the welfare of mankind as those which we may reasonably expect in the near future, and never was there so little justification as at present to hamper in any way the work of those engaged in searching by the experimental method for means of preventing and curing disease.

Obvious as are such beneficial results of

animal experimentation as those specified,—and many other similar instances might have been cited by way of illustration,—it should be borne in mind that the full significance of the importance and of the results of experimentation upon animals for the biological and the medical sciences can be adequately appreciated only by those who possess special knowledge of these sciences, and that it is only those who are thus informed who can fully realize the injury which would be inflicted upon these sciences and upon medicine by such legislation as that contemplated in this bill. Upon this matter it is the voice of science and of medicine, which is likewise the voice of true philanthropy, which should be heard and which should control legislative action, and not that of those who, however worthy their impulses, however high their social position, however great their knowledge in other departments, do not possess that special knowledge which renders them competent to judge of the merits of this question.

The voice of science and of medicine, so far as it receives authoritative utterance, is overwhelmingly opposed to legislation of any kind which would take in any measure the direction of experimental medicine and physiology out of the hands of those who on account of their special fitness have been chosen by the authorities of our higher institutions of learning and of research to convey instruction and to conduct investigations in these departments. Unnecessary and offensive in the highest degree would it be by any system of official inspection, such as that proposed in this bill and which might readily be used as a system of outrageous espionage, or by legislation of any kind, to attempt to dictate or control how, and by whom, and for what purposes, and under what conditions, and upon what animals in the laboratories and the institutions of the higher learning, experiments shall be made. The decision as to these matters should be left wholly to those in charge of these institutions, who are the ones most competent to judge of them.

Those engaged in the Government laboratories, in the medical schools and the universities of this country, in teaching and in investigations which require experimentation upon animals, can be safely intrusted with this function. To say the least, they are not less humane than are those who advocate legislation to control and restrict animal experimentation in these institutions. The assertion which has been made by anti-vivisectionists, that experimentation on animals brutalizes those who witness and practice it, is an insult, without shadow of foundation, to a class of scientific workers devoted to the investigation of problems of the highest importance to the welfare of mankind. Their efforts are to secure the desired knowledge by infliction of the least possible needless pain upon animals used for experimentation, and we do not hesitate to assert that this solicitude to avoid the infliction of unnecessary pain renders them more susceptible than the average man to actual cruelty to animals.

We have been unable to learn that there has been a single instance in which abuse has been made of the practice of animal experimentation in the Government laboratories, the medical schools or the universities of the District of Columbia. Any legislation which proposes in any way to control, restrict, or interfere with animal experimentation in these institutions is, therefore, unnecessary, as well as offensive to those who are engaged in the scientific investigations conducted therein.

If there be any doubt as to the opposition of the great body of scientific men and of physicians to such legislation as that proposed in this bill, we beg that Congress will not take action favorable to this bill or to any similar one until sufficient time has been given for a full expression of opinion from scientific and medical associations throughout this country, for the matter is one not merely of local interest, but may concern the future progress of the biological and medical sciences, and of preventive and curative medicine throughout this country.

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FIG. 1.

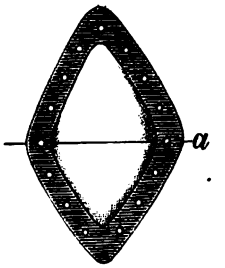

FIG. 2.

FIG. 3.

FIG. 4.

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FIG. 5.

FIG. 6.

FIG. 7.

—THE—

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Original Communications.

*THREE CASES OF PLASTIC NASAL SURGERY—FOR SADDLE-SHAPED NOSE, REMOVAL OF ENTIRE NOSE, AND ARCHED ROMAN NOSE.**

BY W. W. KEEN, M.D.,
Professor of the Principles of Surgery and Clinical Surgery in the Jefferson Medical College of Philadelphia.

CASE I.—SADDLE-SHAPED NOSE REMEDIED BY THE PERMANENT INSERTION OF A SILVER GILT PLATE.

On April 9, 1895, A. McG., a woman of twenty-five, was admitted to the Jefferson Medical College Hospital, for treatment of a deformed nose. Eighteen years previously she had fallen and fractured her nose (Fig. 1). The bridge of the nose was almost entirely obliterated, being scarcely more than an eighth of an inch above the level of the cheek, thus tipping her nose markedly upward and also making her mouth very oblique. I was consulted as to the possibility of remedying the deformity, and Dr. Walter J. Freeman kindly examined the nose and found that there was no impairment of either breathing or smell. I decided not to interfere in any way with the bones, but to carry out the following plan: Dr. W. J. Hall, a skillful dentist, who has paid special attention to the cure of such deformities, first took a cast of the nose, and upon this built up a wax

* Read before the Philadelphia County Medical Society, February 26, 1896.

nose which was satisfactory to the patient as well as to me. From this as a model he constructed an artificial bridge, consisting of two plates of silver soldered together; the posterior plate corresponding to the shape of the bones, the anterior plate (somewhat smaller —Fig. 2) corresponding to the desired outline of the remodeled nose; the space between the two plates was left vacant, but was entirely closed by soldering them together. The picture gives a front view of the plate. This made the piece to be inserted much lighter than it otherwise would have been. All around the margin a row of small holes was drilled, which, it had occurred to me, would fix the plate firmly in place by granulation tissue pushing through the apertures and being probably later transformed into fibrous tissue. The plate was then polished and heavily gold-plated.

On April 19, 1895, a transverse incision was made just above the alæ of the nose, and the superficial tissues loosened as far as the lower border of the frontal bone on each side, and slightly toward the tip, below the transverse incision. My object in loosening the soft parts towards the tip of the nose was to prevent the edge of the plate from protruding. The gilded plate was then inserted, and the opening closed by Halsted's subcuticular suture. The suture was removed six days after its insertion. The highest temperature was 99.4°. A bleb formed over the bridge of the nose, but soon healed.

The result is shown in the photograph (Fig. 3). The gold plate has never caused the slightest inconvenience, and on seizing the nose by the thumb and finger the plate seems to be very firmly fixed in place.

Up to the night before the operation, I had believed that my idea was entirely original, but on that evening Dr. Taylor pointed out to me a paper in the London *Lancet* for February 17, 1894, by Dr. S. K. Ellison, of Adelaide, South Australia, reporting the insertion of a nasal plate which, from the description, I am led to believe was practically identical with my own. His operation was done in 1886, and after seven years the plate was still retained with entire comfort.

In a similar case I should be inclined to make an incision on one side of the nose sufficiently large to allow of insertion of the plate, with a very small incision upon the other side for the purpose of loosening the tissues from the bony and cartilaginous nose. The photograph shows the worse side of my patient's nose, where the scar is much more evident than upon the other side.

Since this operation was done, I have seen the notes of several other somewhat similar cases. In the *Medical Record* of April 27, 1895, Dr. Weir reports the treatment of a case with a celluloid plate. He first attempted to use gutta percha, which proved unsatisfactory by reason of softening, and sometimes also was not tolerated. Later he hit upon celluloid, which had been used for closing apertures in the skull by Fraenkel, and this seems to have been very satisfactory. Attempts at inserting such plates through the nostril, which I also had considered, do not seem, as a rule, to be tolerated so well, as in two cases Weir was compelled to remove the celluloid plate, which lacked sufficient support from below. In two of his cases, through an incision in the cartilage within the nose, he chiseled out the bone and also removed a portion of the cartilage, thus restoring the contour. In another case he made a V-shaped incision inside of the mouth to bring down the lip. It will be noticed that in my own case the effect of raising the skin over the bridge of the nose has been to depress the tip of the nose and the upper lip, making what was a very oblique mouth a horizontal one and thus improving the appearance very much.

In the *Annals of Surgery* for June, 1895, Stimson also reports the case of a man, of twenty-five, who had a saddle-shaped nose from fracture. A piece of aluminum five-eighths of an inch long was inserted between the skin and the bones through a small incision in the alæ. As the outline of the nose was not satisfactory, a year later the wound was reopened, the piece of aluminum removed, and in its stead one of gutta percha about half as large again was inserted. The gutta percha in this case seems to have done very well.

In the *New York Medical Journal* of September 28, 1895, Foote has reported a case operated on by Bull, of New York, by means of a platinum bridge. In this case the upper lip and the nose were separated from the superior maxillary so as to expose the nasal bones. Holes were drilled into the left nasal bone and both superior maxillæ just outside the anterior nares. The platinum bridge had three supports, which were pressed into these holes. A steel pin was thrust through the nose from side to side, holding it securely in position. A considerable amount of swelling and headache followed the operation, but dis-

appeared within a week. The steel pin was removed on the seventh day, and the patient left the hospital in seventeen days. The improvement was very great, but the outline of the nose does not seem to me to be quite as satisfactory as in my own case. There is apparently, however, the same improvement in the position of the mouth from the lowering of the tip of the nose. It seems to me that the multiple holes in the side of the plate are quite sufficient to hold it in place, if I may judge by the result of my single case, instead of the more severe operation resorted to by Bull.

Schimmelbusch (*Archiv für Klinische Chirurgie*, 1895, p. 739) condemns the use of all foreign bodies, including gold-plate bridges, ivory, etc., but the cases which I have cited in this paper show that he is quite wrong in his conclusions against them. In fact, I am by no means sure but that in the second case I might have been able to construct a new nose by a forehead flap, giving it shape by means of such a gilt silver support.

CASE II.—REMOVAL OF THE ENTIRE NOSE FOR SARCOMA, WITH AN ARTIFICIAL NOSE FIRST OF ALUMINUM AND LATER OF SILVER.

W. J. L., aged fifty, was kindly sent to me at the Jefferson Medical College Hospital, December 3, 1894, by Dr. T. A. Enos, of Townsend, Del. Personal and family history negative. About four years previous to coming under my care the patient had noticed a small wart on the left side of his nose. Two years later he tried various quack cures for it, when it began to grow, and when I saw him it was a circular tumor, 1½ inches in diameter, extending from a little to the right of the bridge of the nose slightly on the left cheek. The skin of the right side of the nose was infiltrated, and also that of the left cheek to some distance from the growth. (See Fig. 4.)

On December 5, 1894, by knife, bone-forceps, and chisel, the entire nose, excepting a little bit of each ala and the septum, was removed, together with a small portion of the adjacent left cheek, the skin of which was involved. The incision just grazed the inner angle of the left eye. The left antrum was opened slightly. The growth was found to have penetrated deeply into the nostril. The hemorrhage was moderately severe, but easily checked by the Paquelin cautery, hot water, and pressure. The entire wound was then packed with iodoform gauze, and dressed as usual. The wound was sufficiently healed for him to go home on the 1st of January, 1895. (Fig. 5.)

Fig. 6 shows the result when the parts were completely healed, the large ragged opening shown in Fig. 5 having contracted very satisfactorily.

The question arose then as to a new nose, and I decided not to do a plastic operation, but to have an artificial nose applied, because, *first*, not only was the nose removed, but a considerable part of the left cheek also: this would require so large a flap as to take a large part of the skin of the forehead and leave a very unsightly scar. *Secondly*, so broad a flap would not retain any prominence like a normal nose, but would flatten out as a mere flap of skin. And *thirdly*, I feared that so large a flap would probably undergo more or less gangrene.

Accordingly, I again invoked the kindly services of Dr. Hall, who constructed an artificial nose of aluminum, so as to be very light. It was constructed with a flange below which hooked behind the bone, and at the upper end with a short lever actuated by a spring. The lever could be pulled down by a wire which was scarcely visible where it protruded through the artificial nostril. When the lever was pulled down by this wire, it could be pushed behind the projecting bone at the top of the large opening, and on releasing the lever the spring pushed it up just behind the bone and so held the nose in place without spectacles or other artificial means.

The lightness of the material from which it was constructed made the pressure both at the upper and lower borders so slight as to give no trouble. A very unexpected difficulty, however, presented itself after the lapse of between two and three months. The nose came entirely to pieces by the destructive action of the tears on the soft solder—hard solder cannot be used with aluminum. The metallic wire which pulled down the lever was made of equal parts of aluminum and tin, and this also was dissolved away. Dr. Hall, accordingly, made a second nose of coin silver, which has answered very much better.

Fig. 7 shows the new nose in position. It was painted to resemble a flesh color as near as possible, and improved the patient's appearance very much, the large hole left by the healing of the parts being most unsightly. The disease so far has shown no tendency to recur.

CASE III.—A MARKEDLY ARCHED ROMAN NOSE CONVERTED INTO A STRAIGHT GRECIAN NOSE.

E. H., aged thirty, entered the Jefferson Hospital March 26, 1896. Six years ago he sustained an injury to the nose which rendered a congenital prominence still more marked. The nose, as will be seen by the photograph, was markedly arched, though no more so than many noses whose owners are quite satisfied with them. He stated to me that its appearance interfered seriously oftentimes with his obtaining employment as a waiter, and that he wished it made into a straight or Grecian nose, though he did not express it in these words. I tried to dissuade him from operation, as his nose was a very respectable one, but he insisted very strongly upon it.

FIG. 8.—Arched nose before operation.

FIG. 9.—Arched nose after operation.

Operation March 26, 1896. A linear incision was made to the bone from near the tip to the base of the nose, and the soft parts dissected loose on each side. With a drill I then penetrated the bones of the nose about the middle of their length. This drill did not go through the soft parts, which were first retracted and then held out of my way by the drill which I left in place for the time being. I then chiseled out a piece of this shape, (), about 22 millimeters long and at its widest part 5 millimeters wide. This made an opening into the interior of the nose. I then attempted with a pair of strong forceps to crush the sides of the nose together, but found they were still very resistent. One or two blows of a hammer on a chisel just at the juncture of the nose with the cheek fractured the two sides of the nose. I was then able to bring them together very well. I then withdrew the drill and by means of a straight needle passed a stout thread of catgut through and tied it tightly. This held the bones in place. A needle threaded with another thread of catgut was passed through the cartilage, which had been partially removed, and the tightening of this ligature brought the whole of it together very nicely. A little trimming of the surfaces was needed with the double rongeur forceps, and then I closed the incision in the skin with Halsted's subcuticular suture. The result was most satisfactory as regards shape, there being a good straight nose instead of the curved nose which the patient originally had.

He made a speedy recovery, without fever or suppuration, and was discharged six days after the operation entirely cured. Fig. 9 shows the result. The scar is scarcely visible.

EUROPHEN.

BY EDMUND SAALFELD, M.D.,
Berlin, Germany.

Since the introduction of iodoform into therapeutics by Mosetig-Moorhof, attempts have been repeatedly made to substitute for this efficient yet dangerous remedy other

substances which, while possessed of equal practical utility, would be devoid of the disagreeable properties of iodoform. During the past two and one-half years I have prosecuted clinical experiments with one of these products, namely europhen, which was introduced into therapeutics by Eichhoff. Gathering from a review of the American literature at my disposal that the indications for the use of this iodoform-substitute are not as yet sufficiently known in America, I have thought the results of my experience with europhen would prove interesting.

Europhen, also known as isobutylorthocre soliodide, appears in the form of a fine yellow powder having a faint saffron-like odor, and contains 28.1 per cent. of iodine. In the dry state it is permanent, while on contact with water, and especially with alkaline fluids, it liberates small quantities of iodine even at ordinary temperatures. Experiments on animals have demonstrated its complete innocuousness, and, as far as I am able to learn from the literature, a case of poisoning from europhen has not as yet been reported. As a result of my experiments it appears that europhen can be regarded as at present the best substitute for iodoform, combining essentially its main virtues without possessing its unpleasant features; for europhen is neither toxic nor odoriferous, and its application to the inflamed skin causes no irritation—a fact which, in my opinion, has not hitherto been sufficiently valued. So far as I am able to learn, Rosenthal is the only one who has commented upon its freedom from irritating effect.

I have employed europhen in simple dermatoses and venereal affections, and desire first of all to report my results in the former class of cases.

In the treatment of most varicose ulcers of the leg, with eczema of the surrounding parts, the latter condition is not infrequently irritated by iodoform, which, in spite of all precautions, is apt to be transferred from the ulcer to the eczematous places. This occasional very disagreeable irritation, which often necessitates the complete abandonment of iodoform, I have never observed during the employment of europhen; on the contrary, this drug exerts a favorable influence upon the eczematous parts. The europhen was dusted upon the ulcer in a thin layer, either in substance or in combination with finely powdered boric acid (either equal parts or in the proportion of one to two or four), while the moist surrounding parts were covered with a europhen dusting powder (one part to four of talcum). Under this treatment the pains from the ulcer usually subsided after a short time, and the burning and itching from the eczema soon ceased, so that, owing to the drying properties of europhen, the ulcers, as well as the skin eruptions, healed in a comparatively brief period.

The non-irritating and non-toxic character of europhen renders it of especial value in pediatric practice. Thus, a powder consisting of talcum with addition of five to ten per cent. of europhen and five per cent. of lanolinum anhydricum—

℞ Europhen, 5 to 10 Gm.;
Lanolini anhydric., 5 Gm.;
Talci venet., ad 100 Gm.

M. ft. pulv.

—has proved very serviceable in cases of intertrigo which had resisted treatment with other powders.

Several cases of pustulous eczema and folliculitis, under the use of a ten-per-cent. ointment of europhen and lanolin, healed in a comparatively short time. The advantage of this application manifested itself here the more distinctly since in pustulous eczema, as well as in many forms of folliculitis, cutaneous irritation is often occasioned by the employment of the more strongly acting ointments, while by the use of weaker remedies a cure results very slowly.

In several cases of pemphigus vulgaris and impetigo corporis (due to various causes), as well as in impetigo contagiosa, this combination proved of advantage.

Further, I employed europhen in the form of the powder in simple operative (incised) wounds, as for instance after extirpation of cutaneous tumors (here also in the form of ten-per-cent. europhen collodion), after excisions of chancres, and also after operations on buboes, and as a protective for places subjected to the galvano- or thermo-cautery. In these cases the favorable results obtained by me coincided completely with those of other authors.

The pronounced adhesive power of europhen proved of especial advantage after scarification of acne pustules and nævi. Here a very small quantity of the remedy applied on a piece of cotton sufficed to at once arrest the hemorrhage which occurs after these small operative procedures. The treatment of balanitis was materially facilitated by the use of a europhen dusting powder (one to four of talcum, or, better still, of boric acid).

I would refer now to venereal affections:

The healing virtues of europhen, employed either in substance or in combination with finely powdered boric acid, in cases of chancroids, which have been especially emphasized by dermatologists, were also strikingly manifested in the cases treated by me. I was the more able to determine this fact since the number of cases of chancroids in Berlin has lately undergone a considerable increase. The ulcers were dusted three times daily with the powder, if necessary after previous cleansing with liquor plumbi or a 1:2000 sublimate solution. The secretion from the sores soon diminished, the sores assumed a cleaner appearance, and cicatrization occurred in a comparatively short time, without the necessity of resorting to iodoform. A further advantage attributable to the more rapid healing under the europhen treatment was that the number of suppurating inguinal buboes was extremely small.

It was not only in typical chancroids, however, that this treatment proved favorable. Mixed ulcers and profusely secreting primary lesions, especially those which had been neglected, were subjected to the use of europhen, the remedy being employed in combination with equal parts of calomel and alcohol. This combination, which I recommended some time ago, has proved very efficient during continued use; the same applies to cases of typical and more scantily secreting chancres, in which europhen was applied during the day, being replaced by an American mercurial plaster at night.

In the form of the powder or a ten- to twenty-per-cent. ointment—

℞ Europhen, 3 to 6 Gm.;
Ol. olivarum, 3 Gm.;
Lanolini, ad 30 Gm.

M. ft. ung.

—europhen produced relief of the pains and burning, followed by healing, in cases of gummatous ulcers and moist papules, and in ecthyma syphiliticum (the ointment being employed in the latter).

On reviewing the results of my observations, it appears that the favorable results derived by me from europhen coincide with those cited in other reports. I would once more call especial attention to the non-irritating character of the remedy upon the inflamed skin, to its utility in pustulous eruptions and folliculitis, as well as to the europhen-lanolin ointment.

The above-mentioned results of my numerous experiments—which, as already mentioned, relate to the employment of europhen for two and one-half years—demonstrate, beyond a doubt, that in dermatology and syphilology, as well as in minor surgery, it is to be considered as a very useful remedy and, I might say, as the best substitute for iodoform at the present time. Europhen causes rapid cicatrization of varicose (and simple) ulcers of the leg; the resulting scar being smooth, firm, and elastic. In all cases of chancroids I observed, without exception, a favorable influence from its use. Kopp, Petersen, Eichhoff, Gaudin, Ullmann and others have called especial attention to the utility of the remedy in this class of cases, and Rosenthal writes as follows: "Up to the present time the favorable influence of europhen on chancroids has been completely confirmed in numerous cases in my practice, so that I need only repeat the words used by me in an article published two years ago: 'that europhen, next to iodoform, is the most useful—and, I might add, the most reliable—remedy in these affections, and that its freedom from odor should be properly estimated.'" To these statements of competent observers I would join my opinion, that, in view of its slight odor, which practically need not be considered, and its prompt effect, I most decidedly prefer europhen to iodoform in the treatment of chancroids; for here we see united, as regards effect, the *cito* and *tutum* with the *jucundum*. What I have said of chancroids is applicable to other venereal—that is, syphilitic—affections of the integument, such as primary lesions, gummatous ulcerations, and moist papules. Finally, I would recommend europhen, in substance or in ten-per-cent. combination with flexible collodion, for small incised wounds and other wounds of the skin, and as a dusting powder after cauterization, scarification, phimosis operations, excisions of chancres, and operations on buboes.

If it be considered how unpleasant are the after-effects of iodoform, how frequently it prevents patients, even some time after its application, from following their social duties, and how much it is dreaded, as a betrayer, by patients suffering from venereal diseases who are naturally inclined to suspicion; if further it be considered that physicians using iodoform are apt to be avoided; then the employment of europhen as an iodoform-substitute, devoid of the disagreeable properties of the former, cannot be too highly commended.

A CASE OF RUPTURE OF THE LIVER, AND ITS TREATMENT.

By Orville Howitz, M.D.,
Clinical Professor of Genito-Urinary Diseases in the Jefferson Medical College of Philadelphia.

Cases of rupture of the liver are rarely met with, and the length of time which the patient whose history I am about to recount survived the injury he sustained makes the case one of unusual interest.

The individual was twenty-eight years old, by occupation a mechanic. He was brought to me at the Jefferson Hospital by Dr. A. B. Harris, of Wilmington.

Dr. Harris stated that five weeks previous to the patient's admission to the institution he slipped while at work and fell with great violence against the machine upon which he was operating, striking upon the right side of his abdomen, and injuring his testicle as well. A severe orchitis supervened, while a sense of uneasiness and discomfort was experienced in the right hypochondriac region.

The inflammation of the testicle confined him to his bed. At the end of two weeks he was suddenly seized with agonizing pain in the region of the liver.

Dr. Harris states that when the patient first came under his notice there was pallor and coldness of the surface, with difficult and short sighing respiration, and small, feeble pulse; the abdomen was distended and painful, but not altogether tympanitic; there was great thirst, accompanied by itching of the skin and jaundice. All the local symptoms pointed to peritonitis. Being unable to lie down, he had to assume a sitting posture.

At the end of two or three days the symptoms somewhat improved, only to be followed by a renewed attack accompanied by an increase of the abdominal distention and jaundice.

Three days after the second attack a swelling just below the margin of the ribs on the right side made its appearance; this rapidly increased in size, giving rise to great pain and discomfort. It was soft, and was the seat of pseudo-fluctuation; this was aspirated, and a pint and a half of grumous blood removed.

On admission to the hospital the patient was emaciated, weak, with a temperature of 97°; pulse 158, small and feeble; tongue flabby and coated; skin and conjunctiva jaundiced. The abdomen was enormously swollen and tender, and on the right side just over the liver there was a fluctuating swelling about the size of an infant's head at birth. The point at which the aspiration had been performed was ecchymotic. There was slight diarrhea, the stools being of a chalky character. The left testicle was enormously swollen, and there had been an effusion of serum into the tunica vaginalis testis. The urine was deep red, with acid reaction; specific gravity 1.027; urea normal in amount; no albumin.

The patient was prepared in the usual manner for an abdominal exploratory operation. Chloroform having been administered, a free incision was made on the right side over the fluctuating tumor. On reaching the peritoneum, this was found to be very much inflamed and thickened, and when opened a semi-organized clot of blood about the size of the two fists protruded into the wound; its removal brought to view a tear in the right lobe of the liver, about three and a half inches in length and two and a half in breadth. Adhesions had formed between the peritoneum and the liver, forming a large sac which contained the blood-clot, part of which rested in the substance of the liver and the remainder in the sac. This was connected with the general peritoneal cavity by an opening about an inch and a half in diameter, through which protruded a piece of omentum, much congested and discolored, though not gangrenous. The abdominal cavity was full of bloody serum.

In order to establish free drainage, and get rid of any blood-clots that might be in the abdominal cavity, an incision was made in the left iliac fossa. After the serous effusion had escaped, the entire cavity was irrigated with a hot saline solution; a drainage tube was inserted in the opening in the left iliac fossa; the wound in the liver was packed with iodoform gauze; the portion of congested omentum was ligated and cut off; and the abdominal wound was closed and properly dressed. The patient rallied promptly after the operation, but the temperature remained subnormal, and the pulse continued weak and rapid.

External heat was applied and free stimulation employed. In twenty-four hours he became delirious; the jaundice increased in a marked degree. He gradually passed into a condition of coma, when death ensued.

A post-mortem examination was not allowed.

So far as I have been able to discover, death has invariably resulted from a rupture of the substance of the liver.

THE USE OF TURCK'S GYROMELE AND OTHER METHODS IN THE DIAGNOSIS AND TREATMENT OF DISEASES OF THE STOMACH.

By Edgar A. Planck, M.D.,
Union, Mich.

Many defects exist in the methods of diagnosis of gastric diseases which have been generally taught and accepted during the last few years. Especially is this true regarding the methods of determining the position of the stomach in cases of dilatation of that organ. I wish, at the beginning of this article, briefly to call attention to the various methods proposed, and the objections to each.

Percussion.—1. If the stomach is empty, no line of percussion sound is sufficient. 2. If the stomach contains air, gas, or water, the sound is transmitted to the colon; and if this also be distended, the most skillful percussion gives unsatisfactory results. 3. If the colon contains fluid or fecal matter, the percussion line of dullness will extend below the real line of the great curvature. 4. In cases with thick abdominal walls the results of percussion are negative.

Succussion.—1. Valuable only in selected cases, and even then the sound is so diffused that the position of the greater curvature is not accurately determined. 2. Succussion is usually most marked in cases without much dilatation. 3. Succussion cannot be made out in fat subjects.

Palpation.—1. Palpation is always negative without the use of the gyromele.

Leube's Method—external palpation combined with internal exploration.—1. Results are not positive. 2. There are eighteen distinct contra-indications to the use of this method, among which are pregnancy, cerebral hyperemia, angina pectoris, etc. (Boas, quoted by Musser in his "Medical Diagnosis.")

Inspection.—1. Practicable if the abdominal walls are thin and the stomach much dilated, but if the stomach be filled with fluid the greater curvature cannot be outlined.

Inspection by Trans-illumination with Electric Light.—1. With an empty stomach the picture is diffused and indistinct. 2. If the stomach contains water, a faint line may be observed, but the diffused illumination shows the colon or small intestine and leaves a doubt as to the location of the greater curvature. 3. The part where the light is does not correspond to the part illuminated. That part only is illuminated which is at the time in contact with the abdominal wall. 4. Trans-illumination is negative in case of fat abdominal walls. 5. The electric light is impracticable for use by the general practitioner.

Turck's gyromele consists of a flexible cable, to the end of which is attached a spiral spring covered by a sterilized sponge, which is removable and can be changed whenever desired. The cable passes through a rubber tube and is attached to a revolving apparatus for the purpose of producing revolutions of the sponge.

With this brief description of the instrument, I wish to consider the uses of the gyromele in the diagnosis and treatment of gastric diseases.

DIAGNOSIS OF GASTRIC DISEASES BY THE AID OF THE GYROMELE.

Location of Greater Curvature.—In the determination of the greater curvature, the gyromele, aided by external palpation, is undoubtedly the safest and most effectual method yet devised. When the sponge reaches the greater curvature, the cable bends upon itself, glides along the greater curvature on up to the pylorus, and even back along the lesser curvature.

The revolving sponge can be palpated from its entrance into the stomach, even through the lower ribs, but more distinctly as it emerges just below the ribs. The transmitted vibrations of the revolving sponge can be distinctly palpated on its entire excursion along the greater curvature up to the lesser curvature, and then backward in confirmation. Besides, that the sponge does course along the greater curvature has been conclusively shown by experiments on the cadaver, on dogs, and on cases of laparotomy.

The size of the stomach from the greater curvature to the lesser and from left to right can be estimated, thus giving an idea of the capacity of the organ, and, if desired, it can be accurately outlined on the abdominal wall.

Determination of Degree of Distensibility of the Stomach.—This is done by using cables of different degrees of flexibility. The stiffer cable, No. 1, may distend the stomach, while cable No. 2 does not stretch the organ at all, and cable No. 3 is so flexible that the most delicate and least resistant stomach is not pushed down. Thus, by comparison, a very accurate knowledge of the distensibility of the stomach may be obtained.

Use of the Gyromele to Remove Material for Microscopical Examination.—The method is as follows: The stomach is washed out, and all

the water aspirated. The gyromele is introduced and revolved two to three minutes, either in one place, or drawn back and forth to touch all parts. Withdraw the instrument, and place the material thus obtained on slide and examine for—

(1) Cells from glands;
(2) Food detritus;
(3) Leucocytes;
(4) Mucus containing bacteria.

This mucus adheres to the stomach walls, partly by its gluey consistency, and partly by reason of the atonic condition of the walls. No other method of removing the mucus has been attended with the same degree of success, and the products of inflammation thus obtained aid materially in the diagnosis of gastritis.

The importance of the microscopical examination is well expressed by Turck:

> The pathological changes produced by the growing colonies of germs upon the walls will occasion a proliferation of the gland-cells, which will be thrown out upon the walls—leucocytes, round cells, thick, tenacious mucus, detritus of food, all swarming with micro-organisms. Where colonies of micro-organisms are found with the other conditions mentioned above, we can make a *positive* diagnosis, *whatever the etiological factors may have been.*

Use of the Gyromele in the Chemical Examination of the Stomach Contents.—The gyromele is useful in making daily observations as to the presence or absence of HCl, as material sufficient for all tests can be squeezed out of the sponge immediately after using. If the test shows at once the HCl reaction, we may safely conclude that atrophy is not present; if, on the other hand, no HCl is found, either atrophy exists in a marked degree, or the case is one of those rare cases of neurosis in which there is complete loss of the acid.

The activity of the rennet ferment may be determined by placing a drop or two of the gastric juice squeezed out of the sponge in ten cubic centimeters of milk, and allowing it to stand in a warm place. If the action of the ferment is positive, it should be shown in five to ten minutes, whereas the late appearance or the non-appearance of the action of the ferment indicates its weakened activity or entire absence.

These simple determinations consume very little time, and are of the utmost value in watching the condition of the secretory glands from day to day during the progress of treatment.

THE GYROMELE IN THE TREATMENT OF GASTRIC DISEASES.

To Remove Mucus from Stomach Walls.—As a means of accomplishing this important indication, the gyromele is very efficient, especially if the soap solution be used in connection with it. The solution is forced down over the whirling sponge through the rubber tube which covers the cable. (I may remark also that any desired medicament may be introduced into the stomach in the same manner.) The soap solution is prepared by dissolving one drachm of green soap in a pint of water, and adding to this one drachm of lysol. About two to four ounces should be used at a time.

The sponge revolves from 200 to 600 times per minute, according to the cable used (stiff or flexible). For general purposes I would recommend cable No. 2, although No. 1 is much used.

For cleaning the walls of the stomach, the organ should be empty, and the best time is before breakfast, although it may be done just before the evening meal.

For the first week or two, in treating cases of chronic gastritis, it is essential that the soap and the material detached from the stomach walls be washed out. To accomplish this, I use Turck's needle-douche, which is a double tube, one tube being smaller and shorter than the other. The smaller tube reaches only to the cardiac orifice, and has attached to its apex a fine sprinkler, which throws a shower against the stomach walls. The longer tube reaches the bottom of the stomach, and through it, either by a siphon or an aspirator, the water and debris may be caused to flow outwards.

Turck originated this needle-douche and double tube, attached side by side, with a sprinkler at the end of the smaller tube. Marcy in 1883 used a single tube divided by a partition, and it acted as a douche-irrigator, but with the inflow and outflow at the same level at the ends of the tube.

When Turck's needle-douche is used with a force irrigator, a fine shower is thrown with considerable energy against the stomach walls, and all parts are thus equally acted upon. The effect upon the membrane is very similar to the effect of a rain douche or fine shower-bath upon the skin.

I can give no better idea of the use of the needle-douche than to quote from Turck's paper read before the American Medical Association at Baltimore, May 9, 1895, when he presented this valuable instrument to the profession. He said:

> For cleaning the stomach, I use an apparatus which consists of a double tube: a small short tube with a perforated ball at the end to be introduced into the stomach;

a larger tube for the immediate return of the water introduced. The water is forced through the small short tube under pressure, and returns through the large tube. This procedure will remove material from the walls, especially if soap is used. The apparatus possesses a great advantage over lavage, which simply removes loose material. In cases of dilatation, the large quantity of water necessary to wash out the stomach by lavage only aggravates the already prolapsed condition and distention of that organ. To overcome this objection, Fleimer recommends lavage in the recumbent position. In using the apparatus I have described, the water returns immediately through the large tube, so that it is impossible to overload or distend the stomach. Not only does this apparatus cleanse the stomach, but it also acts *as a needle douche*, and as such is a *vaso-motor stimulant*. It has been used with remarkable results for the last year in cases of pronounced gastroptosis and dilatation, *restoring* the *latent muscle* and *sluggish vessels* to their normal condition.

Its Use in Stimulating the Muscular Tissue of the Stomach.—The vibratory effect produced upon the stomach walls by the gyromele is very perceptible. The vibrations can be distinctly felt, and this has been repeatedly observed in experiments upon animals.

Vibratory effects have recently attracted considerable attention in the medical world, and it has been shown that their use increases the strength and tone of the general muscular system.

The effect which I have noticed in connection with the use of the gyromele is that the dilated stomach is soon able to empty itself within the normal limit of time, whereas before beginning the treatment the food would lie in the stomach until the following day. The muscular walls seem to gain power to churn the food and to force it through the pylorus.

Its Use in connection with Electricity.—When electricity is indicated in the treatment, it can be used with the gyromele, and all parts of the stomach easily reached. The sponge on the end of the cable acts as one electrode, while another can be applied to the abdominal wall, or the "indifferent" electrode can be used in the rectum, or a flat electrode may be placed in a chair to be sat upon. With the use of the gyromele as an electrode, the operator can know, by feeling the vibrations of the revolving sponge, when the pylorus is reached, and then, by making the electrical connections, establish a combined internal massage and electric treatment. The vibratory effect of the revolving sponge is greater than that of the electric current.

Its Use in Some Cases of Hyperacidity.—In some cases an excess of HCl is due to the irritation caused by the products adhering to the stomach walls, and the removal of this material by the instrument tends to decrease the irritation and, consequently, the excess of HCl. The accompanying pain and distress also gradually disappear.

Its Use in Some Cases of Constipation.—The effect of the gyromele does not seem to be limited to the stomach, but the circulation in the mesenteric vessels is stimulated, and the colon and intestines seem to receive their share of benefit. In those cases of constipation due to congestion of the visceral vessels and atony of the muscular tissue of the intestines, the results of its use are plainly seen in the relief which follows. Constipation is relieved, and in some cases it would seem that a direct relation exists between the use of the instrument and the relief of the constipation. However, constipation is a symptom caused by various conditions, and it is only the particular class of cases mentioned above which is benefited by the use of the gyromele.

The use of the gyromele and double tube is contra-indicated in cases of gastric ulcer. However, the soft flexible sponge produces no injury to the tender stomach-walls, provided the lesion does not already exist.

Many cases which have been cured by these methods of treatment might be cited, but I wish to present the salient points of only one, as it is a good illustration of the benefits to be derived from the use of the apparatus. The case was one of rather more than ordinary severity, and was typical in its etiology and pathology of a large class of chronic gastric diseases.

CASE.—Male, aged twenty-four, first complained of distress in the region of the stomach; pain diffused over the epigastrium; occasional nausea; gaseous eructations; a feeling of distention of the stomach, affecting breathing and heart-beat; general listlessness; anorexia.

The history, as pertaining to the stomach, was as follows: As a child he had a "weak stomach" and often suffered from attacks of fever and vomiting following errors in diet; had the habit of eating hastily and often; ate freely of pastries and other unsuitable foods. No constant distress in the stomach until three years ago; at that time began to complain of pain when the stomach was empty, which pain was relieved by the ingestion of food. Hence the patient acquired the habit of eating whenever the pain occurred. Began to lose flesh at about the time the pain was first noticed, and was about twenty pounds below his normal weight, and becoming pale, when examined.

To sum up: The patient had been a weak child, indulgent in diet, eating at unseasonable hours, bolting his food and suffering from occasional attacks of acute gastritis; within the last three years the disease had become chronic and progressive in character, notwithstanding the correction of dietetic errors and the institution of medicinal treatment.

Physical Examination: Weight, 128 pounds; complexion, pale; expression, melancholic; hair and skin dry; teeth in good repair; tonsils enlarged; rhino-pharyngitis; Luschka's tonsil hypertrophied; lungs and heart normal; liver and splenic areas negative; abdomen bulging in hypogastric region; right kidney palpable.

By use of the gyromele the greater curvature of the stomach was found to extend three inches below the umbilicus. Laterally the stomach extended to the right of the mammillary line. The organ was found to be distensible and lacking in resistance. The transverse colon was prolapsed.

Patient was directed to take Ewald's test meal on the following morning, and afterwards to appear for analysis of the stomach contents.

The contents of the stomach were aspirated one and a half hours after the meal, and examination resulted as follows: Quantity, 300 cubic centimeters; odor, butyric; on standing, separated into three layers, the upper one of mucus, the middle one of transparent fluid, and the lower one consisting of a granular mass of undigested food; no free HCl; total acidity, 22; action of ferments much delayed.

Directed patient to come next morning with stomach empty of food, for microscopical examination of its contents.

On December 4 the contents were withdrawn and found to contain debris of undigested food from the day before; no HCl.

Washed out stomach, and aspirated water; afterwards used gyromele for three minutes, took material from the sponge, and examined with microscope and found: (1) a few columnar cells; (2) particles of partially digested food; (3) many leucocytes; (4) groups of bacteria among the mucus.

Examination of the blood showed 3,970,000 corpuscles to the cubic millimeter; hemoglobin 55 per cent.

Examination of urine showed neither albumin nor sugar.

Diagnosis: Chronic glandular gastritis, with dilatation, in the second degree.

Treatment: I withdrew all medication. Used the gyromele daily, and during the first week the soap solution, and followed this by the use of the needle-douche. During the second week used the gyromele alone. At this time a return of the free HCl was noticed. The appetite improved and the gastric pain was lessened.

During the next month the gyromele was used three times a week. The result was a gradual improvement in all the symptoms. There was a gain in weight and a decided gain in spirits. The melancholia passed away. One fact in this case impressed me particularly, viz., the systemic depression, headache, and general "tired feeling," which occurred when the mucus collected on the stomach walls, and the great relief obtained by its removal by the gyromele. It seems to me that this fact proves that the depression and listlessness so often seen in chronic gastritis are due to the effect of the micro-organisms found in the stomach.

Examination two months after the beginning of treatment showed the greater curvature located at the umbilical line.

The motor power of the stomach is increased; it empties itself within six hours, and the test by the use of salol, as suggested by Ewald and Sievers, shows salicylic acid in the urine in seventy-five minutes; free HCl is present, and the total acidity is 48.

The improvement in the physical condition after disappearance of the symptoms was certainly a good result, and leads me to believe that in time the patient may be permanently cured, as many others have been.

The newer pathology and treatment of gastric disorders is developing rapidly, and, in my opinion, the old way of treating such cases entirely by the use of drugs is destined soon to become obsolete. Certainly no one who has witnessed the brilliant results obtained by the newer methods of treatment will doubt that ere long these methods will be permanently added to our resources in combating a class of diseases which has long proved troublesome to the profession.

A PLEA FOR THE EARLY EXCISION OF LABIAL EPITHELIOMA IN GENERAL PRACTICE.

By James J. Walsh, A.M., M.D.

Every now and then there are seen in the hospital service of a large city inoperable cases of labial epithelioma. These cases have usually been operated upon once or oftener,

but either the operation was originally delayed too long or, when done, not enough tissue was excised to secure non-recurrence. Yet all the authorities are agreed that it is in these, of all cancer cases, that prognosis as to recurrence after thorough timely operation is the most favorable. Even of epithelioma of the tongue, a much more serious condition, Jonathan Hutchinson has recently said:* "No one ought now to die of cancer of the tongue; nothing except neglect of the early stage can bring about such a result."

As a rule, of course, cases of labial epithelioma come during the early stages into the hands, not of the regular surgeon, but of the general practitioner. They do not come to him, however, at the very beginning, but usually after the failure of the fissure or ulcer (that represents the initial lesion) to heal under home treatment. This means a delay of some weeks, or even longer. The period from the original invasion of the tissues by the epithelial growth until the occurrence of glandular involvement which at once makes the ultimate prognosis doubtful is not very long. P. S. Connor,† before the American Surgical Association last summer, stated that "in the course of four or five, or maybe six months after the appearance of the initial lesion, infiltration of a gland or glands under the jaw usually takes place. Some cases of glandular involvement have been reported after only three months. While these cases of very early glandular involvement are probably rather irritative in character than metastatic—ordinary inflammatory products causing the enlargement, not cancer cells—still this cannot be depended on with any assurance; and enlarged lymphatics always seriously complicate the case and make prognosis uncertain."

When a case presents itself, then, for treatment with a suspicious sore on the lip, there is not much time left for expectant treatment. In the very mildest cases a month at most may be spent in the effort to secure healing of the lesion. The main part of the treatment for this will be the absolute exclusion of all possible sources of irritation that may be keeping up what is merely a chronic but essentially benignant inflammatory process. This must include above all the removal or proper treatment of broken or protruding teeth, and the absolute interdiction of smoking or chewing. Complete physiological rest, as far as practicable, combined with stimulation of granulation by ordinary applications—a mild caustic to begin with—will almost infallibly cure promptly a benign ulceration.*

If at the end of a month of care and observation no signs of absolute tendency to heal completely are manifest, then the patient's best interests will be consulted by the removal of a section of the lip wide of the infiltrated margin of the sore. This would be a good working rule, no matter what the age of the patient, for a number of labial epitheliomata have been reported as occurring under twenty-five, and I have seen within a year an inoperable case in a man not yet thirty. When the patient is over forty it becomes almost an infallible precept.

When the open sore has existed for some time, and there is considerable infiltration shading off into neighboring tissue, then the delay of a month may be dangerous. Especially is this true in the young, whose more active vitality hastens the usually chronic growth of such neoplasms.

Mistake in diagnosis is possible. The distinction between epithelioma and labial chancre may be difficult. Chancres of the lip are most frequent in women, in whom labial epithelioma occurs with extreme rarity. The comparatively quick onset of the chancre, its rapid course, the results of anti-syphilitic treatment, and the delay of a month after the case comes under observation, which is usually two to four weeks after the appearance of the initial lesion, will always clear up any doubt. The exceptional chancre or tertiary lesion that could not be diagnosticated by these means should be excised rather than that the patient be allowed to take the serious risk of further delay.

*Address in Surgery before the British Medical Association: *Lancet*, August 3, 1895.

†Transactions of the American Surgical Association: art., "Treatment of Cancer of Lip, Tongue, Floor of Mouth, and Pharynx."

*The use of caustics beyond the preliminary mild cauterization that is directed to the thorough destruction of microbes present, and the freshening of the tissues for the new growth of granulations that it is hoped will lead to healing without excision, is extremely inadvisable. The irritation set up, and the consequent inflammatory reaction, lead to a more rapid growth of epithelial elements, while the increased lymphatic activity favors their dissemination through the lymphatic channels and hastens glandular involvement.

In general, the so-called palliative treatment of neoplasms on the face with caustics gives ground for little ultimate hope of cure, and is the source of a good deal of danger. Even essentially benignant neoplasms such as cysts will in the course of time degenerate into true cancers from the almost constant irritation awaking the slumbering embryonic activity of epithelial elements; or is it that it furnishes a suitable culture medium for the growth of the cancer contagium?—J. J. W.

The general practitioner not doing much surgical work may hesitate at excision, for two reasons: first, supposed gravity of the operation; and second, the disfigurement of his patient.

The operation is extremely simple. The triangular excision is not followed by much bleeding, digital pressure easily securing the coronary artery on each side; and the hare-lip pin, which should penetrate all the tissue of the lip but the mucous membrane, with the figure-of-eight ligature, will control the arterial hemorrhage at once. Not too many turns of ligature should be used, as sloughing from pressure may ensue. The skin-edges and mucous membrane are then carefully coapted with fine silk ligatures. The dressing may be acetanilid collodion, which has neither the offensive appearance or smell of iodoform, acts distinctly as an anodyne in the slight inflammatory reaction that ensues, and is as efficient an antiseptic as the other powder. Roswell Park* has sometimes found that microbes from the buccal cavity (which is so rich in them) find their way under the collodion, are retained, and cause suppuration. Until the removal of the hare-lip pin, after preliminary stoppage of the oozing by intermittent pressure, he allows the wound to heal under a scab, which forms very rapidly, as a rule, in this situation.

The operation and dressing need not take longer at most than ten minutes. The one essential principle to be remembered in the operation is that, as Connor says (*loc. cit.*), with regard to the excision of tissue "sins of omission are much more frequent than those of commission." Too much will scarcely be removed under ordinary circumstances, but the excision of too little makes the operation worse than useless.

As to disfigurement of the patient, very little follows early excision. Where the lesion is central, as it often is, one-half the length of the lip can be excised,† and the yielding labial tissues — especially in those past middle age where some alveolar absorption has taken place — will make up for it, leaving scarcely more to be noticed than a linear scar. Where more than this is removed, slight splitting of the angles of the mouth to facilitate slipping of tissues will allow the edges to be nicely approximated; and where the defect is not central, splitting of that angle nearest the excision will greatly tend to obviate subsequent deformity.

The operation itself takes but a few minutes, and in most cases can be done without ether, Schleich's solution deadening sensation locally quite enough to make the operation almost painless. Within twenty-four hours after operation the patient can go on with his work. In two or three days the hare-lip pin is removed; in six days the stitches are taken out; and if the excision has been done well wide of the limits of the disease, the patient has been rescued from what might have been a fatal disease.

In one of two cases* operated on in the Out-patient Department of St. Agnes's Hospital within a year, the patient lost but the day of operation from his usual occupation; in the other the patient was a fireman working on the "night shift," and was able to work the night after the operation. In neither was there any complication, nor has there been any sign of recurrence; the deformity is scarcely noticeable.

As to the patient's permission to do the operation, most doctors have the experience that Jonathan Hutchinson† formulates so well. "I have never met a patient," he says, "to whom I have said kindly but seriously and confidently, 'You have got cancer,' who was not ready to assent to operation without delay."

* *Medical News*, Jan. 11, 1896. Clinical lecture.

† Treves: Operative Surgery.

* Both these cases occurred in the service of Dr. Ellwood Kirby. The first was operated upon by Dr. Walter Reynolds, to whom thanks are returned for notes and permission to report the cases.

† *Loc cit.*

A MODIFIED METHOD OF ADMINISTERING OXYGEN AND ETHER.

By H. A. Hare, M.D.,
Professor of Therapeutics in the Jefferson Medical College of Philadelphia.

The clinical results which have so far been obtained from the administration of ether and chloroform vapor when combined with oxygen gas seem to prove beyond all doubt that the oxygen decreases the danger of the anesthetic and to a large extent obviates the difficulties which surround the administration of these drugs, and most of the untoward effects which we are accustomed to meet with as a consequence of their use. Thus, when oxygen is given with ether, vomiting is less frequently met with, excessive pallor is rarely seen, and post-operative depression seems to be largely avoided.

As a general rule, however, it has been the

custom of physicians and surgeons who have employed oxygen gas in combination with ether or chloroform, to place the anesthetic in a wash-bottle and then to allow the oxygen gas to pass through it in such a way that the patient received in the inhaler a mixture of anesthetic vapor and oxygen, the mixture being made by the passage of the oxygen gas through the liquid anesthetic in the bottle. An evident disadvantage of this arrangement is that the quantity of anesthetic which is volatilized can only be in direct proportion to the volume of oxygen gas which is forced through the wash-bottle, and therefore with every increase in the quantity of vapor which the patient receives he must also receive an increased quantity of oxygen. It has been claimed, too, by those who have employed the ether and oxygen combination most frequently, that in a pretty large proportion of cases a greater length of time is required for the anesthetizing of the patient, and that in some cases it seems almost impossible to get the patient under the direct influence of the drug. We believe that this difficulty lies in the fact that as soon as a large quantity of oxygen gas is used, to convey a large quantity of anesthetic vapor to the lungs, the

Krohne & Seseman's inhaler, with respiration indicator.

patient rapidly passes into a condition which is called by physiologists apnea. The respiratory centre is no longer irritated by the normal proportions of carbonic acid in the blood, and therefore sends out feeble respiratory impulses; and as the patient does not breathe as rapidly or as deeply as before, the result is that very small quantities of the anesthetic are taken into the body. As an illustration of what we refer to, we may call attention to the familiar experiment of artificial respiration in the physiological laboratory, where if the bellows be employed too frequently and forcibly the animal soon ceases to breathe and will lie quietly almost without any respiratory movement for a considerable period of time after artificial respiration has been stopped. The explanation, therefore, of the difficulty of anesthetizing a patient with the ordinary oxygen-and-ether apparatus, is that the excessive quantity of oxygen which is conveyed to the patient's lungs develops the condition of apnea of which we have spoken.

The apparatus which the writer has employed with success, and which he suggests as a substitute for the one heretofore employed, is shown in the accompanying illustration which is taken from his article in Park's System of Surgery.*

It consists of a somewhat funnel-shaped piece of leather having a greater diameter in one direction than in another, into which is fitted a piece of soft felt or spongio-piline almost a quarter of an inch thick. In the under surface of the leather cone is inserted a small metal tube, and at the opening of this tube a small hole is cut in the spongio-piline. The ether is then poured upon the spongio-piline in the cone, in the apex of which is placed some absorbent cotton. The oxygen enters the cone by means of a rubber tube attached to the metal entrance which has been mentioned. By this arrangement several objects are accomplished. In the first place the supply of oxygen can be delivered to the patient in varying quantities without altering the amount of anesthetic which is being given. In the second place, any quantity of anesthetic can be employed without necessarily increasing the oxygen. Thirdly, the leather cone prevents the rapid evaporation of ether from the outer side of the spongio-piline. And fourth, the spongio-piline, being much more porous than an ordinary towel, will retain a large quantity of ether in liquid form when this drug is poured upon it. Finally, if desired, the same apparatus can be used for the administration of chloroform by removing the metal cap on the smaller end of the cone, as in this way the patient will receive not only the anesthetic vapor and the oxygen, but also fresh air through the end of the cone in such quantities as the physician deems wise. In these cases it is best to use the attachment known as the Krohne and Sesemann "respiration indicator," which, as seen in the cut, consists of a small feather on a pivot which moves to and fro with the motions of respiration, thereby providing the physician with a gauge as to the rapidity and force of the respiratory movements. The soft felt is very cheap, and a fresh piece can be used for each patient.

In conclusion, the writer cannot condemn

* Lea Brothers & Company. 1896.

too strongly the method of employing chloroform vapor and oxygen by passing the oxygen directly through the chloroform without the free administration of air in addition, for, after all, air is what we are intended to breathe, and not oxygen gas alone, although it may be advantageous at times to add an increased quantity of oxygen to the air.

Still more severe condemnation should be directed towards the attachment which is placed on some of the Junker inhalers, and which consists of a small rubber bag which, instead of acting as a reservoir of fresh anesthetic vapor and oxygen, is inflated and collapsed by the expiration and the inspiration of the patient, who does not receive even fresh oxygen and anesthetic vapor, much less fresh air, but, on the contrary, inhales again and again air, oxygen and vapor which are loaded with the impurities of frequent expiratory efforts.

[After this article had been put in type, the author saw an interesting paper by Dr. de Hart in the *Journal of the American Medical Association* of June 20, 1896, upon the same subject, in which was described an apparatus almost identical with the one herein recommended.]

THE TREATMENT OF VULVAR AND ANAL PRURITUS.

The *Journal de Médecine de Paris* of March 15, 1896, states that MORAIN carries out a treatment as follows: Morning and night the vulva is douched with water as hot as the patient can possibly stand, containing one per cent. of chloral, carbolic acid, or vinegar. Afterwards it is well to employ by means of a compress the following prescription:

℞ Hydrochlorate of cocaine, 15 grains;
Distilled water, 3 drachms.

Or the following ointment:

℞ Menthol, 45 grains;
Olive oil, 15 minims;
Lanolin, 1½ drachms.

[The proportion of menthol to lanolin is so great here that we would advise three or four times as much lanolin being employed.—ED.]

Instead of this ointment the following may be used:

℞ Bromide of potassium,
Salicylic acid, of each, 15 grains;
Glycerite of starch, 5 drachms;
Calomel, 2 grains;
Extract of belladonna, 2 grains.

Or the following lotion may be employed:

℞ Bichloride of mercury, 30 grains;
Alcohol, 3 drachms;
Rose-water, 10 drachms;
Distilled water, 1 pint.

In still other cases it may be necessary to employ the continuous or interrupted electrical current to the part as strong as can be borne. In particularly rebellious cases resection of the parts may be absolutely necessary.

In pruritus of the anus, Morain regards the influence of very hot water repeated two or three times a day over the parts as the best. He also suggests, with a view of overcoming any tendency to constipation, that the patient after preparing for bed shall use an injection of oil, or at least introduce within the anus some vaselin. An additional means of treatment of this troublesome disorder is to apply every night and morning a glycerole made as follows:

℞ Lime-water, 1 drachm;
Calomel, 30 grains;
Glycerin, 5 drachms.

Or the following ointment:

℞ Calomel, 1 drachm;
Vaselin, 1 ounce.

Or,

℞ Red oxide of mercury, 1 drachm;
Vaselin, 1 ounce.

Or, again, absorbent cotton smeared with oxide-of-zinc ointment may be applied to the anal opening; or cauterization of the painful part with nitrate of silver in the proportion of one drachm to the ounce may be used. Finally, quadrilateral scarification of the skin about the anus may be necessary.

PRIMARY EPITHELIOMA OF THE URETER.

RUNDLE (*Medical Week*, 1896, p. 549), in presenting a specimen, stated that fullness on the right side had existed a year before death. Examination had shown a fluctuating swelling beginning two inches below the liver, extending to the median line in the lumbar region. The urine was clear and freely passed. There were no symptoms of renal calculus. On tapping, there was evacuated eighty ounces of fluid with a specific gravity of 1.020, becoming nearly solid on boiling. Death was from exhaustion. The autopsy showed a large growth in the region of the kidney, beginning at the vesical end of the ureter and spreading into the bladder, seminal vesicles, and peri-vesicular tissues, upward to within an inch of the crest of the pelvis. The tumor was soft and friable, and was found to be a squamous epithelioma.

The Therapeutic Gazette

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Leading Articles.

THE VALUE OF ACONITINE IN FACIAL NEURALGIA.

Notwithstanding the introduction within the last few years of a large number of very valuable pain-relieving drugs which find their best application in the treatment of neuralgic pains, there still remains a certain class of patients in whom painful nervous conditions exist which these newer remedies will not relieve, and as a result, after trying these recent additions to our materia medica list, we are forced to return, now and again, to remedies which were employed for this purpose many years ago and which are still employed by some practitioners in preference to their more recent relations. Among these drugs of the older class is the alkaloid of aconite or monk's-hood, namely, aconitine, which is familiar to some of the older practitioners as aconitia. For many years this remedy was constantly given for the relief of facial neuralgia, with more or less success; and even before aconitine was isolated, physicians had discovered that aconite itself was almost equally useful. So powerful was aconite considered in the relief of neuralgic pains that in his work on Therapeutics (the fourth edition of which was published as long ago as 1874) Stillé, speaking of neuralgia, said that "in the treatment of this distressing affection the benefits to be derived from aconite are unequivocal and precious," and he goes on further to state that "cases illustrative of its anti-neuralgic virtues are to be found in the periodical literature of the profession." It will be remembered, too, that during the past year Dr. Newton Hunsberger published an original article in the THERAPEUTIC GAZETTE in which he recorded the successful use of this drug in the conditions we have named.

At the recent meeting of the Association of American Physicians, in a discussion of the treatment of acute neuralgia of the face, Dr. Janeway, of New York, spoke favorably of the use of this drug for its pain-relieving properties, and dwelt upon a fact which is well known to many therapeutists and to chemists—that the aconitine of commerce is an exceedingly variable preparation so far as its therapeutic properties are concerned; he had often discovered that aconitine purchased at one drug store produced little effect in relieving pain, while that purchased at another instantly relieved the suffering.

In all probability this is due to the fact, overlooked by many physicians, that there are two forms of aconitine upon the market, one of which is amorphous and the other crystalline. The crystalline form is the variety which possesses the greatest usefulness, and that known as Duquesnel's aconitine is always to be employed. The aconitine made by the process advised in the British Pharmacopœia—which is similar to that obtained by the process directed in the Pharmacopœia of the United States for 1880—is an uncertain preparation, frequently in large part composed of pseudo-aconitine. Further, of amorphous aconitine there are two varieties, the hydrated and the anhydrous.

The dose of pure aconitine is as yet undecided because of the uncertainty and impurity of many of the specimens which have been tried by physicians. Thus, it is stated that as much as 2½ grains of so-called aconitine has been taken with impunity, and, on the other hand, that a fatal case of poisoning has resulted from the administration of $\frac{1}{128}$ grain. Further than this, the U. S. Dispensatory asserts that $\frac{1}{640}$ grain is probably the largest amount that ought to be administered. On the other hand, it is commonly stated by a number of

authors that the dose is $\frac{1}{100}$ grain, and it will be remembered that in Dr. Hunsberger's article that writer stated that he administered to one of his patients $\frac{1}{100}$ grain of aconitine every two hours with no apparent effect until the second day.

The general trend of professional opinion seems to be that, owing to the powerful poisonous influence of this alkaloid and the uncertainty of its dose, it is not justifiable to administer it internally; personally we would feel that if we did give it internally we would be running a considerable risk and in the event of accident would be held responsible for any disagreeable results which might ensue. In those instances in which the drug must be given, we would prefer to use full doses of a fluid extract of aconite which had been carefully standardized—such, for example, as normal liquid aconite. In this way the drug may be administered without any of the uncertainties that we have named.

It should not be forgotten that aconitine in the form of the oleate of aconitine or in the form of an ointment has been largely and successfully employed externally by being painted over a neuralgic nerve—its influence here consists in paralyzing the peripheral ends of sensory nerves; but even this application has sometimes resulted in the absorption of so much of the remedy as to produce alarming symptoms.

THE PROPHYLACTIC INFLUENCE OF QUININE.

In a letter from our Paris correspondent which appeared in the May number of the THERAPEUTIC GAZETTE, will be found a brief account of a recent discussion before the Academy of Medicine in Paris, in which a French physician had the temerity to assert that quinine is of no value as a prophylactic against malarial fever—a statement which was combated by others who were present, notably by that well known investigator in regard to the malarial germ, namely, Laveran.

It seems hardly necessary at this period in the history of medicine, and in view of the well known results following the administration of quinine in cases of malarial fever, and the recent studies which have been made which show that the derivatives of cinchona are destructive to the malarial parasite, for us to cite instances of historical facts in contradiction to this absurd statement made by the Parisian physician above referred to. No sooner was cinchona found to possess anti-malarial powers in those already suffering from the disease than its use was extended to the prophylaxis of malarial fever, and as long ago as 1854 there was a standing rule of the British Navy that when seamen were sent ashore in tropical malarious regions every man in the crew should receive a dose of cinchona wine as a prophylactic; later, quinine was employed in place of wine of the bark.

The experience of medical officers in the British Army and Navy in the Crimean War, of South American physicians, and of American physicians and surgeons, points to the value of quinine as a prophylactic beyond all doubt, and Stillé tells us that in 1840 Dr. Van Buren (U. S. A.) employed cinchona as a prophylactic at Fort King, Florida. Further than this, careful comparative studies have been made in the British and American armies as to the value of quinine under these circumstances, and, in one notable instance, an East Indian surgeon records that one regiment exposed to malaria was protected by the daily administration of quinine while another regiment at the same station which did not receive quinine suffered most severely from malarial infection.

It would seem that those who attack well proved and authenticated facts in therapeutics after all perform a valuable function in medical life by doing so, for they not only call attention to their own mistakes, but also remind their fellow practitioners of facts which may have been partly lost sight of in the hurry and strain of daily practice.

THE RELATIVE INFLUENCE OF POTASSIUM AND SODIUM SALTS ON THE SYSTEM.

We have already called attention in a leading article in the June GAZETTE to the paper of Dr. Weir Mitchell, concerning the mental disturbances produced in some persons by full doses of the bromides (chiefly the potassium bromide). These disturbances, it will be remembered, do not consist merely in the stupid mental state so often seen from the use of the bromides, but also include, as Dr. Mitchell pointed out, symptoms of more or less marked insanity in susceptible persons. In the discussion which followed Dr. Mitchell's paper the editor of the GAZETTE called attention to the fact that in the use of the bromides and other drugs of the same class, physicians were wont to look for all the influences exerted to the acid rather than to the base, and

stated that when full doses of any one of the potassium salts were used a definite and well marked physiological action took place in addition to that produced by the bromine, iodine, or other medicament ingested with the potassium; further, that the effect of the potassium in large amount was distinctly poisonous to all protoplasm, and in small doses acted as a depressant to important vital functions, and that for this reason preparations in which sodium was the base were to be preferred. With these views, however, some of those present did not agree, and Dana of New York went so far as to speak of the possibility of potassium exercising any depressant effect as a "bugaboo" unworthy of credence and never seen in practice, although the writer of this article asserted that he and other clinicians had noted this well known fact by the bedside.

As a matter of fact the evidence in support of the writer's views is sufficiently strong to indicate that the old maxim, "None are so blind as those who will not see," is once more proved correct.

If we regard the matter from a purely scientific basis we find that as long ago as 1867, Rabuteau, from his investigations, laid down the rule that the poisonous action of the metals increased with the atomic weight amongst the elements of the same group—so that potassium, the atomic weight of which is 39, is more poisonous than sodium, the atomic weight of which is 23. Again, if we take chlorine compounds, we find that chloride of potassium is a muscle-poison and that chloride of sodium is innocuous. The studies of Guttmann, Ringer, Claude Bernard and several others prove that "potash salts are all far more poisonous than soda salts," and that the acid of the salt plays no part in producing the poisonous symptoms in such salts as the nitrate, carbonate, and chloride; or, in other words, potassium is always a poison in itself. Full doses of the potassium salts, we are told by Ringer, lessen the frequency and force of the heart's beats and make them irregular, and again, "that soda salts in twice or three times the quantity which proves fatal in the case of potash salts, produce no effect on the system save a passing weakness." Even in still larger doses soda salts exert no influence on the heart or the temperature, or on the brain, cord, nerves, or muscles, whereas potassium does depress all these functions or parts. In regard to bromide of potassium, Ringer states, after discussing the experimental evidence, "it produces the same symptoms, in the same order, as other potash salts, and that the more or less rapid induction of these symptoms depends on the amount of potash the salt contains. Bromide of potassium, like the chloride, paralyzes not only the central nervous system, but likewise the nerves, muscles, and heart, the central nervous system being affected sooner than the nerves, and the nerves sooner than the muscles; and therefore we conclude that these effects of bromide of potassium, which it possesses in common with all potash salts, are due solely to the potash, the bromine playing no part in the process."

Leaving the scientific side of the question, and turning to that of practical therapeutics, we need only reiterate the fact that we have seen potassium salts in full doses produce depression, and quote from the New Sydenham Society's Translation of the Lectures on Pharmacology of Professor Binz, of Bonn. Thus, after detailing the symptoms produced by large doses of bromide of potassium in healthy young men, in whom there was a fall of temperature and feebleness of the heart, Binz says: "Control experiments with potassium chloride showed that the effect on the heart was always largely due to the potassium. Later on we shall have yet to consider in detail the very marked effects which the salts of potassium exert upon the heart's action."

And again Binz states: "Sodium bromide, taken by the same individuals in the same manner as the potassium salt, produced the same effects on the nervous system, but not on the pulse and temperature."

To quote once more from Binz: "If potassium bromide has been taken for a considerable time, or even for a few days only, by susceptible persons, it has been observed to affect the *heart* unpleasantly, the pulse becoming feeble, irregular, and intermittent. This is doubtless due to the potassium, which, constituting thirty-three per cent. of the salt, may very readily, given in the large doses above mentioned, and in a form so easily absorbable, exert its depressing influence upon the heart's action. *For this reason sodium bromide is preferred by many physicians.*"

The following editorial note from the London *Lancet* of April 4, 1896, still further indicates that the potassium base produces poisonous symptoms:

The coroner for mid-Essex held an inquest on March 26 on the body of a man whose death appears to have been due to excessive indulgence in what is usually considered to be a comparatively safe drug—namely, bromide

of potassium. Suffering from neuralgia, he had been in the habit of taking this salt in doses of two to three drachms. The drug does not appear to have produced any of the usual symptoms of bromism, but may have caused the palpitation of the heart of which the deceased had frequently complained. During the night of March 23 he felt very cold, gave two deep gasps, and almost immediately expired. The medical practitioner who was sent for stated at the inquest that he found the deceased quite dead, his mouth wide open, the eyes half-closed, and the pupils somewhat dilated. A bottle containing the drug was on the table, and examination showed that it was pure bromide of potassium. The witness attributed death to failure of the heart's action caused by taking the bromide. This case is interesting for several reasons. It proves in a marked manner the danger of taking any drug, however harmless it may be reputed to be, in large and repeated doses without the advice of a medical man. No doubt in this instance a medical attendant would have recognized the depressant action the salt was exerting upon the heart and would have discontinued its use. Even in the most modern works on therapeutics this danger is not mentioned, yet it is well known that all potassium salts cause "depression, shown by diminished energy of contraction of the cardiac muscle, with final stoppage in diastole" (T. Lauder Brunton). As this bromide is constantly administered in large and repeated doses, the action of its basic constituent should always be borne in mind, and if signs of its depressant effect are observed its use should be abandoned, the bromide of some other base being selected if in other respects the action is beneficial. Many secret remedies for "fits" contain this drug in large quantities, and it is evidently desirable that the public should be warned that their use is not unattended with danger.

DIFFICULTIES ENCOUNTERED IN REDUCTION OF DISLOCATION OF THE HIP.

By far the most noteworthy recent contribution to the important subject of hip-joint luxation is the Samuel D. Gross prize essay contributed by Dr. Oscar H. Allis. The author maintains the following propositions:

"1. The capsule is the most important agent against traumatic dislocations of the femur.

"2. For the laceration of the capsule and dislodgment of the head of the femur, the femur is employed as a lever.

"Every lever has a fulcrum; the fulcra required in dislocations of the femur are bony and ligamentous:

"4. Dislocation by thrust, if possible, is infrequent.

"5. Reduction by circumduction is the simplest, the most brilliant, and the most hazardous of all modes of replacement."

The introductory study is devoted to the anatomy of the part. Allis summarizes the functions of the ligamentum teres as follows:

"1. The teres does not prevent dislocation, since it is possible to tear it from the head without completely dislocating the head.

"2. The ease with which the teres can be torn after division of the capsule is also proof that its function is not that of a ligament.

"3. While it is true that the teres may be torn without a dislocation taking place, it is also true that without rupturing it a complete dislocation is possible.

"4. If the teres escapes rupture in the process of dislocation, it is highly probable that it will be ruptured during efforts at replacement, if circumduction be employed.

"5. As there is no evidence that the teres contributes to the normal security of the joint, therefore insecurity or weakness of the articulation after the reduction of a dislocation cannot logically be attributed to its loss; nor can its absence be said to favor subsequent dislocations.

"6. After reduction, no unusual position of the limb or foot (such as flexion, inversion, or abnormal eversion) can justly be attributed to the lost function of the teres."

The functions of the capsule are:

"1. To check the movements of the femur, against a tendency to transcend the limits of safety. If one will dissect every structure from the joint but the capsule, he will be surprised at the resistance this single structure will offer to diplacement.

"2. To offer a large surface for the attachment of muscles that contribute toward the safety of the joint and preside over the movements of locomotion.

"3. To furnish a large surface for the display of synovial membrane.

"4. To form a shut sac for the retention and distribution of synovia."

There follows an interesting and convincing demonstration of the mechanics of the ligamentous formations about the joint. The fascia lata is studied in detail, and the following *résumé* of its functions is given:

"1. It forms the sheath or envelope of the most important walking muscles of the thigh; during progression the tension of this fascia (through the gluteus maximus and tensor vaginæ femoris) is of the utmost advantage; through the same muscles it steadies the head of the femur in the socket.

"2. It checks adduction of the extended thigh through the ilio-tibial band.

"3. It checks outward rotation of the extended thigh.

"4. It assists the hamstring muscles and the sciatic nerve in checking flexion of the extended limb.

"5. It checks a tendency to hyperflexion of the thigh upon the abdomen.

"6. It contributes largely to man's ability to stand at rest.

"7. After reduction of a dislocation at the

hip-joint, the fascia lata and the untorn portion of the capsule are our main reliance in retaining the head of the femur in place. If the feet are tied together, the fascia and nothing else presses the head into the socket.

"8. After fracture of the neck this ilio-tibial band is relaxed during adduction.

"9. As adduction tightens the ilio-tibial band, and abduction relaxes it, the latter position is voluntarily assumed in the early stage of hip disease.

"10. As flexion of the extended limb tightens the fascia lata and drives the head into the socket, this manœuvre elicits pain in the early stage of hip disease."

In considering the sciatic nerve and hamstring muscles in relation to luxation, Allis shows that if the femur is abducted at right-angles with the pelvis the leg must be flexed to relax the nerve and the hamstring muscles. If, however, the femur is carried still further outward, the head may burst through the capsule and be dislodged inward. In this case the nerve of course escapes, but should the head be shifted from the position of thyroid luxation to that of dorsal luxation there is danger to the nerve, since there is but one possible path for a dislocation inward to take in order to become a dislocation outward, and that is, between the hamstring tendon and the socket; and since the tendon of origin of these muscles is within half an inch of the socket, and the nerve is nearer, if anything, under no circumstances can the head be circumducted and carried outward without traumatism, more or less severe, to the nerve. If the sweep of the knee through which this may be effected be a large one, and especially if there be sufficient extension of the leg on the thigh to shorten and make tense the nerve, then there is great danger that the head will pass between the nerve and the tendon.

If such a condition be suspected, the fact may be ascertained by having an assistant push upward upon the knee in the direction of the long axis of the shaft of the femur, while the surgeon, by extending and flexing the leg, will find that the nerve may be alternately tense and relaxed in the popliteal space if it be over the neck, and the head out of the socket. In such a case the successful reduction of the head will release the nerve, but the traumatism may have been so severe that a prolonged neuritis or a partial or complete paralysis may result. "If the head, in its transit from within outward, pass between the nerve and the socket, the former may be bruised a little, but not detached from the tendon, and will lie, after dislocation, between the head or neck and the tuberosity."

"When dislocation of the neck occurs, the danger of hooking up the nerve through the efforts at reduction will be greatly increased if the head in passing outward catches up the nerve and tears it from its attachments. This is no random statement. Bigelow, Morris and Johnson have caught it up in experimental work, and Koons did it in actual practice.

"If the nerve be hooked up during the reduction, the following conditions will be present: The nerve will cross the front of the neck and lie beneath the untorn parts of the capsule and the tendon of the psoas muscle; it then descends through the rent in the muscular partition to the adductor magnus, beneath which it descends to the popliteal space. At least three inches of the nerve are taken up in this detour, and hence the thigh *must* be flexed on the pelvis, and the leg on the thigh, to accommodate them to the shortened nerve.

"If the dislocation occur through flexion, adduction, and rotation inward, the capsule may yield and the head may escape outward and downward without touching the pelvis in the descent. In such cases I have seen the head fall directly upon the nerve, from which it can slip to either side."

Following these anatomical considerations is a study of the mechanism of dislocations artificially produced. This experimental work, Allis tells us, is fully and minutely corroborated by actual traumatisms, and he proceeds to prove his proposition by reports of cases in his own practice and taken from medical literature. In considering the mechanics of reduction he describes an exceedingly ingenious and seemingly practical way of fixing the pelvis and apparently gaining full control over the femur.

In describing the phenomena of dislocation, the author gives special directions for cleaning out the socket, having frequently observed in his work that so much detached muscular material has been carried into the socket during the course of reduction as to give the restored limb a constrained position. If any portion of the capsule is torn off, it must be the pelvic, and Allis holds that all foreign substances which enter the socket must enter its lowest segment. It is clear that the side of the head that drives the capsule before it into the socket cannot be made available to remove it; this must be done by

the opposite side; hence if the capsule has been pushed into the socket from the dorsal aspect, the first step is to flex and abduct, while if the entrance has been made from the thyroid aspect the femur must be flexed and adducted to accomplish the same end. After engaging the inverted capsule the femur should be rotated inward to tighten the Y-ligament and drive the head down into the socket, while at the same time the knee is raised and the foreign matter is removed from the socket. The success of the method will be apparent by the free and unembarrassed motion of the femur.

From the experimental standpoint Allis would urge upon every one the importance of testing the degree of extension and adduction after every reduction.

The second part of the work is devoted to reduction of dislocation by manipulation.

Allis lays it down as an axiom that every dislocation must be restored through the steps in the reverse order of the displacement. For the replacement of the head by direct steps in inward dislocation he offers the following directions: 1. Flex and abduct the femur. 2. Make traction outward. 3. Fix the head by digital pressure, and adduct.

The medical profession, says Allis, has long practiced, with variable success, methods somewhat resembling that which has just been described. Authors recommend: 1. To flex and adduct the thigh. 2. To make perpendicular traction upon the knee, and follow traction by adduction. 3. To make traction with adduction, using the foot in the groin as a fulcrum. 4. To place the patient astride a bed-post, using it as a fulcrum while extension and adduction are made. 5. To make traction and adduction while an assistant with a fillet passed between the thighs makes traction upward and outward.

All of these have been recommended, but success in their employment does not depend upon the scientific application of the principle. In all adduction is made a prominent feature; but adduction, if attempted too early, defeats its own end.

Reduction by the indirect method, *i.e.* rotation, is not favored.

In considering the reduction of dislocation outward, Allis calls attention to the striking resemblance between two very diverse conditions, viz.: "a dislocation primarily inward into the thyroid depression, but which has by secondary influence been rotated outward, so that the foot points outward and backward; and another, dislocated primarily outward, but which by reversed action also yields a foot turned outward, or even slightly backward.

"As these two conditions are the result of forces directly opposed to each other, their reduction will evidently require equally diverse methods. In neither form of dislocation will there be evidence of decided fixation, nor will the limb refuse to lie parallel with its sound fellow.

"Extreme outward rotation in which the inside of the foot tends to look outward—the heel forward and inward—is hardly possible in any condition save that of a primary dislocation inward, with external rotation, the head being controlled by the Y-ligament, which is untorn. The outward rotation of everted dorsal is rarely beyond rectangular eversion. To determine whether the case in question be an everted dorsal, let the operator make a gentle attempt to rotate still further outward. This will be checked because the Y-ligament lies in front, and external rotation will make it tense. Not so with the 'thyroid reversed:' in this case the Y-ligament lies behind, and rotation, after the foot looks backward, can still be increased.

"If the foot looks backward or outward, find the head; to do this, locate the inner condyle—it points in nearly the same direction as the neck. After this locate the great trochanter—it will lie internal to the dividing line between the two divisions of the bone, when the head has been dislocated primarily inward; but if the head be dislocated primarily outward, the trochanter major cannot lie internal to this line.

"Lastly, make direct pressure upon the head: if it be a reversed dorsal, the head will sink; if a shifted thyroid, the upper end of the femur will have a bony support; if it be a dorsal with eversion only, the head can be felt by direct pressure; if it be a shifted thyroid, the trochanter can be felt as well as the head.

"It must be evident, therefore, that retracing the last step of dislocation is not a simple or unimportant matter; that a confident rational procedure will only be based upon a knowledge of the path taken by the head. As we are now dealing with dislocations outward, the first thing to do with an everted dorsal is to convert it into an 'inverted dorsal.' To do this, flex (this will relax the Y-ligament), abduct, and rotate inward. The operator should observe carefully that the head follows the manipulation; if it does, he has retraced the

last step of dislocation and is ready to undertake the second step.

"In the second stage of dislocation the head left the region of the socket and fell outward and downward until arrested by the yet untorn part of the capsule; hence to retrace the second step—*lift*.

"To complete the second stage, the head must be turned inward to the region of the socket; and now note that the tendon of the hamstring muscle and its attendant, the great sacro-sciatic nerve, are directly in the way.

"This is a most critical moment, for the head must be turned into the region of the socket, and has no other path than between the tendon and the socket. To do this while the limb is lifted vertically with the leg flexed at right-angles to the femur, which relaxes the tendon and nerve, turn the leg as a crank downward and inward until the heel looks footward. Do not use violence. If obstruction be experienced, it cannot at this stage lie in the capsule; it cannot lie in anything over which violence will prevail. It will lie in one of three things: either the head strikes bone, in which case it must be lifted higher; or it strikes the tendon; or the nerve. In case it strikes the tendon, it can be readily shifted, and the escape of the tendon may be followed by a similar escape of the nerve. I have frequently caught them in succession, and have so caught up the nerve as to flatten it over the head, and being spread out twice its original size it has barred my progress to the socket. Therefore I urge caution at this stage, for if the nerve be caught and force applied, it (the nerve) has one of three destinies before it: it must effectually bar all entrance to the socket, or slip off the head and escape, or slip off the head upon the neck of the femur, from which it can with difficulty be disengaged. I speak of this as a moment of peril, for no one, when he undertakes to restore a dislocation, can tell what degree of havoc attended the original traumatism, and whether or not the nerve has been freely stripped from its attachments to the hamstring (biceps) and lies dangling like a large cord in front of the socket.

"If the head has met with no obstacle in rotation, it is now ready for the last step. Please note the position of the head of the femur: it rests upon a ridge between the outer and inner planes. It has reached its present position by being lifted to a level with the socket and rotated obliquely beneath it. There are three courses open to it now: it can fall outward, pass inward into the thyroid depression, or ascend obliquely upward into the socket. There are two ways for accomplishing a happy replacement:

"The first is by traction. By this means the knee is lifted skyward, which relaxes the remnant of capsule, while an assistant with his thumbs makes direct pressure upon the head in the direction of the socket. This may reduce it; if not, the operator may bring the knee down in extension, the assistant still keeping up the pressure upon the head. The manœuvre should not be attended with violence or dispatch. The surgeon, if he encounters resistance, should be warned by it, and retrace and modify his course. Usually the head will pass noiselessly into the socket.

"The second, or indirect, method is to employ the Y-ligament of Bigelow as a fulcrum to drag the head into the socket. The reader will bear in mind the position of the head: it lies below the socket, and must be directed obliquely upward and outward.

"If, now, the knee, with the leg flexed, be carried directly downward in extension, the remnant of untorn capsule (Y-ligament) will be made tense, and the head be lifted into the socket. Should the head slip outward upon the dorsal aspect, it must be replaced by lifting, and, instead of extending the knee directly downward, it should be a little abducted and then extended. If, on the contrary, the head slip inward into the thyroid depression, then the knee should be adducted and the Y-ligament tightened a little by inward rotation. If, now, extension be made, the head will be directed in the course of the socket."

Allis ascribes failure of reduction to lack of skill or facilities in the operator; obstacles that prevent the head from entering the socket; obstacles pushed into the socket by the head; the sciatic nerve hooked over the neck of the femur. If the nerve has been caught up, the immediate effect will be flexion of the thigh upon the pelvis owing to the sudden shrinking of the nerve. There will be imparted to the limb a springing motion which it can get in no other way.

Diagnosis is founded upon the tense, cord-like nerve in the popliteal space. The operator has but one course to pursue, namely: "1. Redislocate the femur; patient supine. 2. Extend the thigh. 3. Flex the leg on the thigh to relax nerve. 4. Turn the ankle of the flexed leg out until the leg is horizontal: the head will now look perpendicularly downward. 5. Shake, rock, jar, adduct, and abduct, with a view to disengage the nerve

from the neck, and make it drop down below the level of the head. 6. Rotate the head into the socket without making the nerve tense—*i.e.*, by not flexing the femur."

The work finally closes with a chapter on "Dislocation of the Head of the Femur Complicated with Fracture of the Shaft."

A summarizing of this important contribution to surgical literature is practically impossible. For a thorough understanding of the subject, every word must be read and carefully considered. As nearly as possible in Allis's own words there have been given in this article the conclusions reached by the author. These conclusions are not open to adverse criticism. They seem clear, logical, rational, and the deductions as to treatment as the result of his studies are so evident that they will probably be universally accepted.

Reports on Therapeutic Progress

ON MECHANICAL SUPPORT OF THE LUNG IN PHTHISIS.

TIDEY recommends this practice in the *British Medical Journal* of March 21, 1896. He says the suggestion to strap the chest in phthisis is invariably met with the objection that one of the objects of treatment in that disease is to expand the chest and so call into play portions of lung which in conditions of sub-active health take little or no share in the respiratory process. This objection does not recognize the change in the mechanical conditions of respiration produced by disease of the lung substance. In health the respiratory capacity of the lung is commensurate with the semi-circumference of the thorax. The diseased lung may be regarded as decreased in bulk, so far as function is concerned, by the amount of lung tissue involved, and it follows that the best mechanical conditions of respiration will be secured by reducing the thoracic cavity in proportion to the reduced bulk of lung. Natural processes of repair tend to secure these conditions, but only lead to complete cicatrization when the disease is of very limited extent. We then find, clinically, a flattening of the chest-wall, dislocation of adjacent organs or hypertrophy of the opposite lung, and anatomically a cicatrix, bands of fibrous tissue, a puckered lung surface, and thickened pleura—all evidences of a natural effort to fill up space originally occupied by healthy active lung tissue. Natural processes are unable to overcome the mechanical obstacles to complete cicatrization when the disease involves more than a small maximum of lung tissue. Bands of cicatricial tissue radiate from the focus of disease to surrounding parts, and, contracting, draw inwards healthy lung to occupy the diseased area, and the chest-wall closes in and accommodates itself to the diminished bulk of lung. Auxiliary processes are pleuritic thickening and emphysematous dilatation of the alveoli about the diseased area. All these processes are slow and uncertain. The cicatricial traction is itself a source of chronic irritation. The neighborhood of the fibrous bands and the emphysematous zones are *loci resistentiæ minoris*, and form favorite lines of march for the invading specific element of the disease. The obvious indication, then, is to aid the natural processes of repair by reducing the thoracic cavity, thereby relieving them of the work of strenuous, prolonged, and often inefficient cicatricial traction. In so far, then, as the inflammatory element in phthisis is concerned, rest and relaxation of the inflamed tissues seem indicated and essential to the healing process.

Comparative rest of the lung may be secured by keeping the patient at absolute rest day and night, but this system has obvious disadvantages, while it fails to fulfill the local indications of rest with relaxation. The English school aims at developing the latent resources of the lung so as to compensate for the loss of respiratory surface, while placing the patient under conditions inimical to the extension of the specific element of the disease, and promoting general nutrition. In extreme cases where this object has been attained, one finds an immense development of the base of the lung, with extensive cavitation towards the apex. The cavitation is a constant source of danger, while the hypertrophy does not necessarily secure proportionately increased aëration of blood, because the latter depends on range of movement as well as on effective respiratory area. With permanently increased circumference of the lower thorax, there must necessarily be decreased range of movement. Such cases suggest how much better it would have been if the compensatory hypertrophy had extended inwards instead of outwards, so as to have invaded and occupied the excavated region.

Two clinical considerations lend weight to the argument in favor of strapping the chest in phthisis, namely: (1) the fact that pleuritic effusion frequently leads to amelioration

of the lung affection in phthisis; (2) the fact that during pregnancy the course of phthisis is often temporarily arrested. Both these phenomena produce similar effects on the lung to that produced by strapping.

The above considerations led Tidey to the practice of strapping the chest-wall as part of the treatment in phthisis, especially applicable in cases of unilateral disease of the apex. The method he adopts is to apply the anterior end of the strap over the lower sternum, and direct the patient to breathe out while he draws the strap round the lower thorax and fixes it over the vertebral column. He uses either strips of strapping or a suitably sized (14 inches by 5 inches) piece of chamois leather spread with plaster, an appliance which adapts itself well to the chest-wall without giving rise to discomfort. The appliance should be kept on till all signs of disease have disappeared and healing is complete. He directs the patient to take a moderate amount of regular exercise and to practice deep breathing. The exercise and deep breathing tend to bring into play all portions of lung not habitually active, while the strapping directs healthy lung to encroach on the diseased region.

The immediate effects of strapping, so far as the writer's experience goes, are decrease of cough and expectoration, followed by cessation of night sweats, gradual fall of temperature, and improvement of general symptoms. The effect on the physical signs is to show a dislocation upwards of the seat of lesion, with gradually decreasing evidences of disease, an encroachment of abdominal organs towards the thoracic cavity, and an absence of falling-in of the upper chest-wall.

The advantages of strapping may be briefly summarized as follows:

In early phthisis (catarrhal stage), to give comparative rest and relaxation to affected lung tissue.

In the stage of consolidation, to secure the same results, thereby limiting the risk of extension; to promote elimination of the disease products by improving the circulation in and about the diseased area; and to facilitate expectoration.

In the stage of cavitation, to promote closing of cavities by directing healthy lung to encroach on the diseased area, instead of relying on natural processes of cicatrization.

Diminished tendency to hemorrhage, by reduced tension on vessels and cicatricial traction on vessel-walls.

The ultimate object is to obtain a smaller thoracic cavity filled with healthy lung, instead of an enlarged thoracic cavity partly filled with diseased lung.

The writer wishes it to be understood that he does not propose this method as a cure for phthisis, but as an essential element in the treatment of that disease directed against the inflammatory lesion, an element which will greatly enhance the value of specific and climatic treatment, and without which those methods will be powerless to restore an extensively damaged lung to a condition of mechanical integrity. The latter essential is now habitually left to natural conservative processes which are inadequate to fulfill it when the lesion is extensive, and only do so with difficulty when it is limited.

THE TREATMENT OF RHEUMATOID ARTHRITIS.

In an analysis of one hundred cases of arthritis, BRABAZON describes his treatment in the *British Medical Journal* of March 21, 1896. He first states that when the cause is unknown, treatment must needs be somewhat empirical. In his own practice he has found the combination of iron and arsenic the most effective treatment, particularly in the early stages. In a general way, for the purpose of relieving pain, particularly at night so as to procure sleep, the best local application is belladonna dissolved in glycerin. Many and various symptoms must be treated as they arise. Especially is good nutritious diet and plenty of it necessary; cod-liver oil with a good extract of malt is useful; and thermal mineral baths carefully applied on the Aix-les-Bains principle, with massage, ought to be used. Sometimes electricity applied in the continuous current he has known to be of great use and to cause wonderful improvement, but the cases must be carefully selected and vigilantly watched.

He mentions that in some few cases he has with considerable success forcibly straightened the anchylosed knee-joint or joints under anesthetic influence so as to enable the patient to get about on crutches or walk with a stick, which is a great boon, but the condition and strength of the patient must be carefully considered before attempting to risk.

PRELIMINARY NOTE ON THE ACTIVE SUBSTANCE IN THE THYROID.

In the *British Medical Journal* of March 21, 1896, HUTCHINSON tells us that papers

have recently appeared by Baumann, by Fraenkel, and by Drechsel, each of whom claims to have discovered the active ingredient of the thyroid gland. Baumann's substance was obtained by boiling entire thyroids with sulphuric acid, the residue being an amorphous substance containing iodine, from which he was further able to extract a compound, to which he has given the name thyriodin, and which he says he has found to be clinically active. The bodies isolated by Fraenkel and by Drechsel are very different in their nature; they are contained in the proteid-free watery extract of thyroids, and are stated to be crystalline substances. Their discoverers assert that they are active in animals, but have advanced no definite proof of clinical activity.

The time, therefore, seems ripe for the publication, in at least a preliminary form, of the results of certain observations which the writer has been carrying out during the last few months as to the effects of the clinical administration of the different ingredients of the thyroid. As idiosyncrasy plays a large part in these effects, he began always by estimating the reaction of the patient to a preparation of known activity—ordinary thyroid tabloids being the preparation employed. This having been ascertained, he compared with it the results of the administration of an isolated ingredient of the gland. The product of a mass of sheep's thyroids was first divided into proteids and proteid-free watery extract. The proteids were found to be active. These proteids are practically only two in number—a nucleo albumin and the colloid matter. The former was inactive, the latter active.

The proteid-free watery extract was then concentrated. It would contain the bodies of Fraenkel and of Drechsel. It was found even in very large doses to produce no effect on a patient who had reacted distinctly to thyroid tabloids and to the isolated colloid matter.

The colloid matter is, therefore, the active ingredient of the thyroid. He has isolated it in a state of purity. At present he mentions among other peculiarities that it contains a considerable quantity of iodine in organic combination, and he has succeeded in splitting off from it a body apparently identical with that obtained by Baumann from the entire gland. If his substance be really active, it would indicate that the colloid matter owes its activity to the presence in it of an organic compound of iodine.

The above statements are founded on observations conducted on normal subjects and on two cases of myxedema, the latter, however, being by no means marked examples of that disease. Full clinical details of these cases, along with charts showing the effect upon pulse, temperature and body-weight of the administration of pure colloid matter, he hopes to publish in conjunction with a detailed consideration of the chemistry of the thyroid at a later date.

The object of the present communication is to encourage those who may happen to have under observation cases of well marked myxedema or of hitherto untreated cretinism, to try in such the effects of the administration of the colloid matter. It is only by the results in such cases that the activity of the substance can be permanently established.

ICHTHYOL AS A THERAPEUTIC AGENT IN THE TREATMENT OF DISEASES OF THE UTERINE ADNEXA.

Some four years ago, BELL, of Glasgow, read a paper before the British Gynecological Society upon the therapeutic effects of ichthyol in diseases of the uterine appendages. His results had been so eminently satisfactory that he was encouraged to employ the treatment on a very much larger scale than he had previously had the opportunity of doing. Formerly it was his almost uniform custom, when patients suffering from diseases of the tubes or ovaries presented themselves, to advise operation for their removal; this he did under the impression that nothing short of operation could possibly remove the diseased condition, and it was his good fortune never to have had a fatal result after oöphorectomy. When he published the results which followed the employment of ichthyol tampons in salpingitis, oöphoritis, hematoma, and pelvic cellulitis, several questions were asked with reference to the unfavorable effects that such a treatment produced on the neighboring organs, especially the bladder. In the *Edinburgh Medical Journal* for April, 1896, the author states that ichthyol in a very small percentage of cases does produce unpleasant bladder symptoms, but these are so infinitesimal and can be so easily modified that he has no hesitation in saying that they do not militate in the slightest degree against the incalculable beneficial effects which result from the employment of this agent; and perhaps the most complete evidence in support of this statement may be

adduced from the fact that although at the present day he is seeing probably three or four times as many cases of pelvic disease as he did at the time referred to in his previous paper, his operations have fallen off in an inverse ratio. To him the effects of ichthyol in the treatment of these at one time intractable diseases are perfectly marvellous; were he to give instances of a very small percentage of the number of cases which he has seen beneficially affected and cured by the simple method of applying ichthyol tampons, he feels assured that operations of the serious nature necessary for the removal of diseased appendages would rapidly decrease. A woman undergoing such an operation cannot possibly be considered completely convalescent under a period of two years, and it cannot be gainsaid that this fact alone, discounting altogether the dangers that the operation necessarily involves, adds very mnch to the responsibility which the surgeon assumes.

The result of careful observation has led the writer to the conclusion that very rarely indeed, if ever, do the tubes or ovaries become diseased independently of some pre-existent disease or lesion in the uterus or cervix; and as these uterine or cervical lesions arise from so many different causes, it becomes imperative to glance at the etiology of the various pelvic disorders which are daily coming under observation, seeing that the efficacy of the ichthyol applications must be very much handicapped, if not altogether destroyed, by failure to deal appropriately with the primary disease.

The author refers only to diseases which are septic or inflammatory in their nature; he makes the reservation that cystic, malignant, fibroid and tuberculous affections may be excluded from the category of ovarian diseases dependent upon a primary uterine origin and amenable to ichthyol applications. It is rarely, indeed, that we find salpingitis and its sequelæ without a pre-existing endometritis, and this again is dependent upon so many pathogenic sources that it would be quite foreign to the subject to trace its etiology throughout. One powerful factor, however, must not be overlooked, as it has an important bearing upon the causation of oöphoritis, as well as being an invariable precursor of endometritis. We refer to laceration of the cervix, in which case it will invariably be ascertained that the affected ovary is upon the same side as the laceration. It therefore becomes a necessity that, simultaneously with the application of ichthyol, this lesion be attended to. If, however, the fissure of the cervix has been in existence for any considerable period, it may prove a difficult matter to deal with it before the diseased condition of the endometrium has been at least partially rectified, and the thickening of the cervix resulting from this reduced so as to bring it into a favorable condition for trachelorrhaphy. So far as his experience teaches, it is not necessary to repair the cervix to insure recovery of the endometrium; but the chances are that the recovery will not be permanent if the cervical lesion is permitted to continue, and certainly the ovary will not have nearly such a good chance if trachelorrhaphy is not resorted to.

Few will differ from the writer in the conclusion that salpingitis with its consequent evils almost invariably results from the inflammatory condition in endometritis spreading by continuity of tissue, and also that in many instances the ovaries become affected secondarily to the tubal disease. This infection, as pointed out in a previous paper, is probably communicated through the lymphatic system; it stands to reason, therefore, that in treating inflammatory conditions of the ovaries and tubes it is absolutely necessary to remove the primary morbid conditions which have given rise to the secondary affections, in the manner indicated.

Two marked cases will suffice to indicate the line of treatment which the author has found most beneficial, as both of the ladies came to him from England for treatment, and in both instances removal of the ovaries had been recommended by men whose reputation is of the highest order. Both patients were married and had borne children; the one had been an invalid for eight years, and the other for over six, and during these periods both had been sterile. One ovary in each case was considerably enlarged and exceedingly tender, while the other was diseased to a less marked degree. In both instances endometritis with considerable hyperplasia existed, the general health was very much reduced, and great pain on locomotion was experienced. He commenced the treatment by curetting, employing his dredge curette, and afterwards applied iodized phenol once a week to the whole of the endometrium, while a tampon saturated with ichthyol was introduced bi-weekly. This treatment was kept up for about three months in each case, a gradual improvement in health and relief of the local symptons being the result. One of these patients (the younger of the two)

became pregnant within a year afterwards, and was delivered of a healthy child at the full term. Both are at present in the enjoyment of good health.

In these two particular instances there was no cervical lesion, but a history of subinvolution, which was evidently the *casus morbi*.

In another case, where gonorrheal infection contracted shortly after marriage was the *origo mali*, sterility had existed for twelve years, and both tubes were diseased. Curetting and the bi-weekly application of iodized phenol, followed each time by the introduction of a glycerin-and-alum tampon, was sufficient to restore the integrity of the uterus and tubes after a prolonged course of treatment, but the writer is convinced that had the therapeutic effects of ichthyol been understood at that time the convalescence would not have been so protracted. As it was, however, when the morbid condition had disappeared a child-bearing epoch was established and continued for some years.

This case is quoted simply to show how important it is to take measures to remove the primary disease or lesion simultaneously with the treatment of the secondary, and this is most emphatically the case where laceration of the cervix coexists. To his mind, therefore, if we make it our primary object to treat those affections of the uterus which are within our reach, and succeed in restoring the organ to a healthy condition, we have a most reliable and almost uniformly potent therapeutic agent in ichthyol where inflammatory conditions of the uterine appendages coexist.

TREATMENT OF AURAL POLYPI.

WILKIN tells us that when we have an aural polyp to deal with, the only good treatment is removal. This may be done either by ring-knives, forceps, or snare. For the sort of instrument to be used, the operator must be guided by three things: (1) the size of the growth to be removed, (2) its position, (3) and the operator's custom. In very large as in very small polypi, the forceps is the best instrument; for medium-sized growths some form of snare may be used; for mere granulation tissue, which resists medical treatment, a ring-knife may be used, especially when the tissue is on the lateral wall of the meatus.

Supposing a snare be chosen, the next point is to decide on the nature of the wire. Piano wire, as used with the nasal snare, is, of course, on account of its spring, undesirable. Silver or iron wires may, however, be used, and meet all the requirements; both are sufficiently strong to detach the polyp from its point of origin, and are flexible without spring. The strength required is not very great, so that the finest wire may safely be used in iron; silver is preferable as a rule, though when a very fine thread is required it is not reliable. It may be thought that with cocaine the spring of piano wire would not matter, but, unfortunately, when a polyp is present, cocaine cannot satisfactorily be applied to the external auditory canal. If you can make out the attachment of the polyp with a probe, do so, but in many cases this is almost impossible. In such cases the best way to use the snare is to pass the loop over and round, and the barrel under the growth, carrying the point as near to the base as possible. Then tighten the loop firmly and steadily until the polyp is completely cut through. As a rule the growth comes from the meatus with the snare when withdrawn, but at times, especially with small polypi, it remains in the meatus. It can, however, be easily removed with the syringe.

For arresting hemorrhage, which is generally very free, gentle syringing with hot water usually succeeds; or the insufflation of finely powdered alum, which has the double effect of arresting the bleeding and shriveling up the base, may be tried. Witch-hazel extract is a useful styptic to have on hand for these cases. After the ear has been carefully syringed out, and the bleeding stopped, the operator should always examine again, and, if need be, a second operation may be done at once. For after-treatment, a solution of boric acid in rectified spirit and water may be used, beginning with half and half, and gradually increasing the proportion of the spirit. Alum may also be used, and is said to be very good. The ear must be syringed out at least once a day with some antiseptic lotion.

For local application it will be generally found necessary to use either chromic acid, solid nitrate of silver, or the fine cautery point. Should the pain be very great after the operation, douching with hot water or leeching in front of the tragus gives relief. Should removal be objected to, caustics or astringents have been recommended in one form or another—nitrate of silver, solid or in strong solution, sulphate or acetate of zinc, perchloride of iron, acetate of lead, creosote, nitric acid, sulphuric acid, lime-water, and

sulphate of copper. Toynbee recommends a mixture of quicklime and caustic potash, to which a little sulphate of iron is added, to prevent rapid deliquescence by which the healthy parts would also be attacked. Chromic acid, recommended by Seely in 1872, is also one of the most effective caustics; a crystal is to be taken up on the moistened end of a probe and applied to the growth, the process being repeated after the eschar formed has separated. The action of this acid is more energetic than that of nitrate of silver, but it sometimes causes inflammation of the canal, even when applied most carefully. Politzer recommends perchloride of iron, in crystal or solution: a piece of cotton wool is to be dipped into the solution and applied to the growth, or a crystal carried to it by means of a probe. Gruber does not speak favorably of this, or the alcohol treatment, praised also by Politzer. The translators of Gruber's work into English, however, have found this latter treatment useful when operative treatment is impossible. At the same time, the following significant remark was made: "The method is naturally only applicable in the case of such flabby polpyi (granulations) not associated with bone disease." Lactic acid (fifteen- to twenty-per-cent. solution) has been recommended in cases of polypoid proliferation by Victor Lange. He has given the opinion of others on the treatment of aural polypi without removal, because there may arise circumstances which absolutely preclude operative interference; but, as a rule, to allow an aural polyp to remain in the ear is, for the reasons given, decidedly bad surgery.

The remaining cases of aural polypi may be generally referred to two sorts of malignant growths—sarcomata and epitheliomata.

Sarcomata are said to be primarily developed in the auditory canal, and rapidly extend to the neighboring structures. Of course they may equally readily involve the ear from the neighboring parts, but in such cases they would hardly come under the heading of aural polypi, nor would they probably come under the notice of the aural surgeon. The fibro-sarcomata are said to remain for years without causing any particular symptoms. On the other hand, the small round-celled sarcomata, growing very rapidly, set up a great amount of pain, and are generally, if not always, associated with a foul-smelling discharge, more or less sanguineous. The surrounding parts are rapidly implicated. If seen and recognized early enough, it might be possible to remove the growth with the knife. The lack of recognition appears to be due to the fact that growths removed from the ear were, at least formerly, not thought worthy of microscopical examination; and, secondly, people suffering from aural disease frequently seem to think that nothing can be done for it, and leave the trouble to treat itself until some more offensive symptom than usual drives them to the medical man for relief. Epitheliomata are said to occur after prolonged suppurative otitis. The commencement differs in no way here from that in other parts. Pain is not such a constant symptom as in the rapidly growing forms of sarcoma.

A case of malignant growth of the left ear, which came under the writer's care some time ago, illustrates strikingly the necessity for microscopical examination in all cases of growths removed from the ear. When he saw the woman she was suffering great pain in the left ear, which was said to have come on after the removal of a growth a few weeks previously at another hospital. The auricle was standing out from the head, and there was general tenderness around it, a soft brawny swelling in front, and a greatly enlarged mastoid process behind, over which the skin was adherent and discolored. The external meatus was almost completely closed by an edematous-looking swelling of the walls of the canal. Some of this tissue was removed, and examined microscopically. The result pronounced the growth a squamous-celled epithelioma. Clinically the growth had appeared much more like a sarcoma. The woman said that about a year previously she had been knocked down by a cab, when the whole of her left side had been severely bruised, two ribs broken, and the left ear and left side of her head bruised and cut. Some three months after this she was compelled to go to a hospital for treatment, on account of discharge from the left ear, with deafness and tinnitus. For some months she remained an out-patient of the aural department, after which, not having received much benefit, as she thought, for a time she appears to have given up treatment. Then she went to another hospital, where a growth was removed from the ear. This gave her so much pain that she would not return, and a few weeks later she was sent to the author. Had the growth been "microscoped" at once, the patient would not have been sent away. It is quite possible to get a fair idea of the specimen structurally from a fresh section

made at the time of removal, and in the case of out-patients every large hospital should do this. When he received the microscopical report, and thus learned the nature of the growth he had to deal with, he thought of Von Mosetig's treatment of malignant growths, and seeing the evident signs of mastoid involvement, together with the anterior growth, he determined to try it, with the consent of the patient. Professor Von Mosetig, of Vienna, brought before the Vienna physicians several cases of malignant and benign growths which he had treated by parenchymatous injections of methyl violet—or, as it is now called, pyoktanin; his report on this was so favorable that, seeing how hopeless his own case was for a surgical treatment, the writer determined to give it a trial.

Beginning with a solution of 1:500, he injected in different parts of the growth ten to twenty minims in all each day for ten days; then he raised the strength to 1:300, and later to 1:100. The action of the drug was quickly visible; the growth contracted and became very hard, and after about a fortnight an apparently fluctuating mass gradually replaced the harder growth. There was no rise in temperature. On opening the soft mass, he found a gelatinous violet substance round the hardened growth. This process of contraction went on whenever the pyoktanin was used, and although the growth had advanced too deeply for hope of saving the patient, the action was very satisfactory. The drug acted remarkably well in relieving the pain; the urine was constantly examined to see whether it was affecting the system generally, and especially the kidneys. Neither albumin nor sugar was present; the quantity of urea passed remained about the same. The urine, from being very foul-smelling when the patient was first admitted into the hospital, became quite sweet while the injections were used.

After death, which took place sixty-two days after the commencement of the treatment, the growth in front of the ear was examined microscopically; the report said that no epithelial cells were present, and that the thickening was due to fibrous tissue. As this was the only part that could be properly attacked, the result was extremely good. The external meatus and the mastoid process formed one large cavity, caused by the action of the drug. A very thin plate of bone existed between the dura mater and the upper part of the cavity.—*Clinical Journal*, March 25, 1896.

ERUPTIONS SIMULATING SCARLATINA.

An editorial article in the *Boston Medical and Surgical Journal* of April 2, 1896, points out that the difficulty of distinguishing an erythema due to scarlatina from one arising from a variety of causes is often so great as to emphasize the fact that no disease should be studied from a single point of view, nor should any one symptom be exclusively relied on. At the outset we are not acquainted with the course that the affection may pursue, nor with the important symptoms that may arise in connection with the eruption.

Griffith discusses the question in an interesting paper, illustrated by cases that occurred in his own practice. He speaks first of an erythematous eruption with all the characteristics of that of scarlatina, which occurs in connection with tonsillitis, and rapidly disappears. In some instances this is associated with the cardiac and articular manifestations of rheumatism. The affection that has been called surgical scarlatina is often puzzling, and the authorities are not as yet agreed as to its etiology. Some consider that it is really a scarlatina occurring in a surgical case, others that it is a manifestation of a septic condition. There can be no question that in many of the cases scarlatina is not present, although an eruption that cannot be differentiated from that seen in scarlet fever is met with. The diagnosis in these cases is one of the utmost importance, especially in a hospital, where the danger to others has to be considered. There is also a scarlatiniform eruption that occurs during the puerperium which is probably of the same origin as the surgical variety.

A scarlatiniform eruption has been described as occurring after the administration of enemata. It occurs also in the course of various diseases, such as gonorrhea and typhoid fever, and in the prodromal stage of smallpox, and is exceptionally present in the prodromal stage of varicella also. Moreover, many cases have been reported where scarlet fever and varicella existed at the same time in one person. It is probable that in a good many of the above cases the erythema was not of scarlatinal origin.

Diphtheria may sometimes exhibit an erythematous eruption of the scarlatiniform type. The diagnosis is made still more difficult by the fact that in very severe cases of scarlet fever the eruption may be very faint while the throat symptoms are very pronounced, and also by the fact that diphtheria often occurs in combination with scarlatina. Some-

times a scarlatinal rash may be of the macular type seen in measles, and it may be difficult to distinguish between the two affections. For those who believe in the existence of rubella or rotheln as a distinct disease, many cases may be found where the eruption simulates that of scarlatina very closely.

It is well known that various drugs may cause scarlatiniform eruptions, and, as many of these are the drugs commonly used, a further source of perplexity is introduced. Quinine may produce an eruption easily mistaken for that of scarlatina, and so may antipyrin. Copaiba, although producing as a rule a bright red macular type of eruption, seated about the joints, may sometimes bring out a scarlatiniform rash. Antitoxin is also to be included in this class, as well as belladonna and numerous other drugs, especially morphine, mercury, and chloral. In a certain class of cases there are recurrences of a widespread scarlatiniform eruption, followed by desquamation, which has been called erythema scarlatiniforme.

With regard to diagnosis, the difficulty that is often experienced may be inferred from the foregoing. The peculiar peeling is of importance as favoring the probability of scarlet fever, yet this guide is not present at the outset and is by no means infallible. The absence of peeling would make the diagnosis of scarlatina rather improbable, but its presence would by no means be certain proof of the existence of scarlet fever. The limitation of the eruption to certain parts of the body is against the diagnosis of scarlatina in a general way, yet malignant cases of this disease occur where there is little if any eruption. The eruptions that simulate scarlatina are more likely to be evanescent, yet this feature is not a constant one.

The importance of deciding at the earliest possible moment whether or not we are dealing with a case of scarlet fever, need not be dwelt upon. Unfortunately, as has been shown in this paper, it is often very difficult to do so, sometimes impossible. The desquamative scarlatiniform erythemata produced by various causes copy an eruption from scarlet fever so closely that at the outsent there is no way of deciding the question definitely. Undoubtedly a great many cases of scarlatiniform erythema, either of the desquamative recurrent variety of the French writers, or due to drugs and the other causes that have been mentioned, are continually diagnosticated as scarlet fever, and so treated from start to finish. Fortunately this error is a safe one to make. The responsibility of the physician who would eliminate scarlet fever in a somewhat doubtful case is very great, and it is wiser to treat the case with all the precautions that would be taken if the diagnosis of scarlet fever were confirmed. Besnier considers, and our own experience leads us to agree with him, that the early desquamation in a scarlatiniform erythema, seen sometimes by the second or third day, is one of the most valuable means of differentiation from scarlet fever, and that furrowing and shedding of the nails and loss of hair are so infrequent in the latter affection that these symptoms may be taken as strong evidence that the eruption is not a scarlatiniform erythema. After all is said, many cases must remain in doubt, even to the end of their course.

ON CHOLAGOGUES.

DR. E. STADELMANN (*Berliner Klin. Wochenschrift*, March 2 and 9, 1896) refers to the article of Rosenberg upon the treatment of cholelithiasis with olive oil, and says that in the treatment of this and similar diseases he does not think much reliance can be placed upon cholagogues. They have been employed especially in two diseases, gall-stones and so-called catarrhal jaundice. In the first case it is sought to sweep out the stones by the increased pressure arising from increased quantity of bile, and in the second to get rid of the plug which closes the ductus choledochus.

In studying the literature of this subject one is struck with the fact that a great many drugs are said to have cholagogue properties, and that different writers have very divergent opinions about the value of each. Stadelmann mentions a number of drugs of this class; one man will say it is active, another that it is entirely inactive. He thinks the reason for this wide divergence of opinion is that under normal conditions the quantity of bile poured out varies greatly from hour to hour. Another reason is the different methods employed by different authors. He found the total quantity of bile secreted from one day to another to vary from twenty to thirty per cent., and in two-hour intervals from sixty to one hundred per cent. Stadelmann's experiments were on normal and properly nourished animals.

The wide variations found in the quantity of bile secreted show that it is extremely difficult to tell how much is to be attributed to

the action of any drug that may be given. Hommarsten reports one case in which there was artificial fistula on account of cicatricial stenosis of the common duct. The variations in quantity of bile were between two hundred and six hundred cubic centimeters in twenty-four hours. The patient died of tuberculosis one month after the operation. In a case of Körte's in which the common duct was open and bile therefrom passed into the bowel, the quantities of bile observed varied between 200 and 1200 cubic centimeters in twenty-four hours.

Stadelmann gives the results of his own experiments, omitting for the sake of brevity four or five hundred tables. He finds that large quantities of water (500 to 2500 cubic centimeters), whether given by the mouth or rectum, have no influence upon the secretion of bile. The liver, therefore, is not comparable in this respect to the kidneys, but to other glandular organs, salivary glands, and pancreas.

The other substances investigated by Stadelmann are grouped in four categories:

1. Those which have no cholagogue action: (*a*) Alkaline salts, such as sodium bicarbonate, sodium chloride, sodium sulphate, artificial Carlsbad salt, sodium phosphate, potassium acetate, magnesium sulphate, potassium bicarbonate, potassium citrate, potassium tartrate, potassium sulphate. These were all given in doses of eight grains to six and a half drachms, and no cholagogue action could be detected. The most of them in large doses distinctly diminished the secretion of bile. (*b*) Purgatives and drastics: gamboge, gamboge-soda, the tubers as well as the resins of jalap, convolvulin, convolvulinate of soda, jalapin, jalapinate of soda, aloes, rhubarb, cathartinic acid, podophyllin, podophyllotoxin, resin of scammony, different soaps, senna. Calomel showed on the whole no cholagogue action—the quantity of bile being now increased, now unchanged, and now diminished — therefore nothing more than normal variations. Moreover, after profuse diarrhea the secretion of bile was not observed to be lessened, whereas in moderate purgative action this was pronounced. (*c*) Various remedies: Alcohol and olive oil resulted in a diminution rather than an increase.

2. Remedies which sensibly lessen the secretion of bile. To this group belong pilocarpine and atropine.

3. Remedies which possess a doubtful cholagogue action. Here belong antipyrin, antifebrin, caffeine, sodium benzoate of caffeine, diuretin, santonin, Durand's remedy (of which oil of turpentine seems to be the active constituent, while ether is inactive upon the secretion of bile). In general, the cholagogue action of all these remedies, if it exists, is slight.

4. Remedies which have a pronounced cholagogue action: (*a*) Salicylic acid in moderate doses. In Stadelmann's experiments on dogs (about twenty kilos in weight), after 1½ to 2½ grammes were given, no decided cholagogue action was observed, and 7½ grammes produced a severe intoxication with severe hemoglobinuria; but three grammes produced a very marked increase in the secretion of bile (about sixty to seventy per cent.), lasting about twenty-four hours, then strongly pronounced salicylic-acid poisoning, great unrest and dyspnea; so that he does not hesitate to pronounce sodium salicylate a powerful cholagogue, although not always uniformly strong in its action.

But by far the surest and most powerful cholagogue we possess is bile itself, and of its constituents the bile salts. Stadelmann says he has studied their activity most accurately and in a large series of individual experiments. He finds that bile and bile acids from the same animal acts less than those from a different animal. In dogs taurocholic acid is inferior in cholagogue action to glycocholic acid. The bile salts were given by the mouth in solution, and never exercised the least injurious action upon the digestion of the animals experimented on; the appetite was not lessened, and the animals behaved entirely normally, although they received almost daily, for months, more or less large quantities of bile salts.

The action of bile acids upon the bile is very significant. The administration of four or five grammes results occasionally in an increase of bile to nearly 100 per cent., the action continuing about twenty-four hours. On further increase (to twice five grammes in twelve hours) the dose is borne without injury, and Stadelmann has seen an increase in the quantity of bile up to 120 per cent. The greater the dose the greater the secretion, is the law, both liquid and solid constituents being increased. The greatest part of the bile acid administered is again excreted through the liver, both the bile acids proper of the animal and the bile acids of a different animal. After the use of salicylate of soda, on the other hand, only the watery portions of the bile are increased, not the bile acids.

Stadelmann discusses then at considerable length the possible therapeutic value of cholagogues in cholelithiasis and catarrhal jaundice. As regards cholelithiasis, he says there are two possibilities: first, that in which the common duct is not completely closed by the stone, either because the latter is too small or because from its irregular shape there are crevices left through which the bile may still leak. If the stone is still small, he believes it possible by increase in the secretion of bile to get rid of it; but if it is large and jammed in, it cannot be got rid of by increased pressure of the bile. Even granting that the secretion of bile be raised to 1000 cubic centimeters in twenty-four hours, this would be insufficient to shove the stone forward while the bile could by drops find its way around it. Nor should we be any better off in the second possibility, that in which the stone completely blocks the duct; for we know by physiological experiments that when the pressure exceeds 120 to 220 Mm., there is a reabsorption of bile and an increase in the jaundice. Hence Stadelmann thinks it no longer tenable that we can overcome obstructions through cholagogues. Their value may be through the exercise of a solvent action upon the stones. This is indicated by the unquestioned clinical value of the alkaline salts. Abnormal bile is acid; the normal is alkaline.

While he does not think the bile acids do much harm to the economy, he descountenances their use in persistent severe jaundice.

THE MECHANICAL TREATMENT OF TABES.

BELUGOU (*Arch. Gén. de Méd.*, February, 1896) passes in review all the various methods of treating tabes by suspension and other mechanical methods, including nerve-stretching. He finds that neither those who condemn suspension *in toto*, nor those who believe in its efficacy, are altogether in the right; for this method, though by no means curative in any sense, is certainly of benefit in the treatment of some symptoms in a few cases. Thus the gait, motor incoördination, to a certain extent Romberg's sign, and vesical paresis, are often benefited by suspension. The author finds that rapid cases, exacerbations, laryngeal crises, advanced age, anemia, edema, obesity, and lesions of the cardio-vascular system are all contra-indications.

The most important portion of the paper is his description of compensatory gymnastics, first introduced by Fraenkel. This method consists in the execution of certain defined movements directed towards the special functions affected. These movements are divided into three classes: No. 1 consists simply of flexion, extension, abduction; No. 2, of simple coördinated movements in a definite direction against resistance; No. 3, of combined coördinate movements. First, the garter is applied round one leg at the level of the knee, and a small piece of wood is fixed thereby to the front of the patella. The patient raises the other leg, then, flexing it, brings it rapidly down so as to touch this piece of wood with the heel. Another movement is obtained by holding a stick just above the middle of the legs; the patient passes one foot alternately over the stick and back again without touching it. A modification of this is the hoop through which one foot is passed without touching it; the advantage of this is that it can be held in different positions so as to combine the action of various muscles.

For the upper limbs many of the same exercises are employed, but in the third class a special series is used necessitating delicate coördination. One of these consists in suspending balls of different sizes in a frame at different heights; these are put in movement, and the patient is obliged to seize each moving ball.

From all these exercises the author has obtained some very satisfactory results. He also suggests making the patient walk between parallel bars to reinstruct him, as it were, to keep his balance. At the same time he points out that it is useless to expect too much from any mechanical method of treatment, and that cases of slow evolution, very marked sensory derangement, and arthropathic complications are least likely to give any results.—*British Medical Journal*, March 28, 1896.

SOME EXPERIMENTS ON THE ACTION OF GUAIAC.

Of late there has been a tendency to attribute to this drug a greater therapeutic value, as a laxative, than it really possesses. COMBERNALE (*Rev. Inter. de Méd. et de Chir.*, Feb. 25, 1896) has shown by experimental research, and has also observed in clinical medicine, that the drug possesses none of the properties which are essential to its use as a laxative: the dose required to produce the desired effect is too large to be safe or agreeable, and the action of the drug in this direction altogether too uncertain. He believes

this drug should be consigned to the oblivion from which some authors have recently tried to recall it.

THE COMBINATION OF CERTAIN ANTIPYRETICS AND ANALGESICS IN INTERNAL MEDICINE AND OPHTHALMOLOGY.

The results obtained by Berger, by combining certain antipyretic and analgesic agents in such a manner as to lessen their harmful action, induced VOGT (*Rev. de Térap. Méd.-Chir.*, Feb. 15, 1896) to continue his therapeutic studies in clinical medicine, with the result that he strongly recommends the following combination:

℞ Antipyrin, gr. xxxvij;
Phenacetin, gr. xxv;
Acetanilid, gr. viij.
M. Ft. in pulv. no. viii.

The results obtained by the use of the powders were: A marked antipyretic action, three powders daily being sufficient to combat the hectic fever of pulmonary phthisis, and with the advantage that the medication could be continued for weeks, and even months, without any unfavorable symptoms. The reduction of temperature was succeeded by a return of the appetite. The only unpleasant complications noted were, in one case, a slight urticaria, and in one case of advanced phthisis a tendency to collapse.

A very characteristic sensation of well-being follows the administration of these powders, especially noteworthy in cases of influenza where the attack has been sudden in its onset, three or four powders being sufficient to produce a pleasant sensation and dispel the neuralgias, inducing finally a calm sleep. For example, in a case of intense supra-orbital neuralgia four powders per diem for two days were sufficient to entirely cure the patient.

In two cases of acute lymphangitis the pain and tension subsided rapidly after the use of three powders per day. As marked an effect has been observed in a case of acute pleurisy with effusion. The absence of toxicity produces a feeling of well-being that is very marked and was especially noted in a case of recurrent erysipelas that had been previously treated by sulphate of quinine.

The analgesic action is well marked. In migraine two powders, given at intervals of one-half hour to two hours, were sufficient to dispel the crises, and the smallness of the dose prevented it from increasing the tendency to nausea and vomiting.

In gastric crises, relief has been secured each time by the use of two powders; while equally good results have been secured in various forms of neuralgia (occipital, brachial plexus, etc.).

Rheumatic affections are also amenable to treatment by this combination — muscular rheumatism, lumbago, torticollis. Its antirheumatic action is, however, inferior to that of salicylate of soda as a curative agent.

It is of great value in inflammations of the eye.

A marked hypnotic action is obtained by one powder given at bedtime.

PHARMACOLOGY OF THE THYROID GLAND.

The attention attracted by the successful use of thyroid-feeding in the treatment of myxedema has led many investigators to study the best mode of administration. The results of these investigations are given by YVON (*Arch. de Neurologie*, No. 3, 1896) as follows:

The implanting of a portion of the thyroid gland beneath the skin of the patient was but an experimental stage of this method of treatment, which has now been superseded by more convenient methods.

The hypodermic injection of thyroid extract has been and is still employed, but is open to objection on the grounds that it requires the constant attendance of the physician, that the preparations are not of uniform strength, and that they are liable to produce suppuration if there is any defect in the antisepsis.

The best method of preparation is that published by Roux, and is as follows: The gland should be removed as quickly as possible after the animal is killed. After careful antiseptic preparation of the field of operation, the glands should be dissected out with aseptic instruments, and after all fat and connective tissue has been removed they should be put into a sterilized, covered glass dish which has been previously weighed. When a sufficient number have been secured, they are taken to the laboratory and weighed. They are then cut into small pieces with aseptic scissors; double their weight is now added of a mixture containing two parts of glycerin and one part of sterilized water. After standing in this for twenty-four hours, they are poured into a suitable bottle, which is stoppered with cotton and sterilized. The extract thus obtained is poured into small sterilized

bottles and will keep for a considerable time; it is less limpid than that obtained by Arsonval's method, but is more active.

The strength of various extracts is not uniform, and consequently no definite dose can be given for all of them. Adopting as a standard that containing twenty per cent. of the thyroid gland, the dose should be one drachm per week. This dose, however, is arbitrary and in active treatment the injection may be made every two days, while in prophylactic treatment an injection once a week, or even once in two weeks, is sufficient.

The thyroid glands themselves have been administered in various forms. The unit of measure is one lobe—that is, one-half of the entire gland—and varies, with the size of the gland, from fifteen to eighteen grains. The gland may be administered chopped finely and cooked, or it may be macerated after chopping in a small quantity of water, and the extract thus obtained given in beef-tea without cooking. Others advise broiling slightly, claiming that the natural juices of the thyroid are less altered when administered in this manner.

Although the administration of the glands themselves has many advantages, it is sometimes difficult to obtain fresh glands, and occasionally patients object to taking them. The following more or less stable preparations have been employed to overcome these difficulties: A powder has been made by separating the gland from all foreign tissues, and, after chopping finely, desiccating at a low temperature to avoid cooking. The objection to this method is that the powder has an unpleasant odor—which, however, has been disguised by mixing with cocao and administering in pill form; eight pills, of five-sixths of a grain each, are given daily. This amount is nearly equivalent to one lobe of the thyroid. The powder may also be dispensed in tablets or enclosed in gelatin capsules.

Various forms of glycerin and aqueous extracts have been devised by various authors. Murray cut the gland into small pieces, and macerated in an equal amount of glycerin, the extract being obtained by pressure and filtration and administered in drop doses, the dose being four times that employed in hypodermic medication. Catillon employed an aqueous extract made with distilled water and evaporated at a low temperature under all aseptic precautions. The extract is of a clear blood-red color, while the powder is gray.

The fresh gland furnishes twenty per cent. of extract or twenty-seven to twenty-eight per cent. of dry powder. The powder is employed in tablet form in a dose of five-sixths of a grain. Vigier obtained a powder in the following manner: After an aseptic removal of the glands, and removing all foreign tissues, he pulpified and mixed them with the biborate of soda and powdered charcoal. In this manner he obtained a dry powder, which he put in capsules, each containing 1⅔ grains of the extract. This preparation, he claims, having never been exposed to heat, is not altered, and keeps for a longer time.

Yvon himself employs the following method: Immediately after the death of the animal the gland is excised under all aseptic precautions, all extraneous tissues are removed, and the gland is powdered with boric acid. When a sufficient number have been prepared they are taken to the laboratory, cut up and triturated with sugar and an additional amount of boric acid. The sugar absorbs the juices, and a mixture is formed almost free from liquid. This mixture is desiccated at a temperature of 86° C., and divided into small masses, which are coated with gelatin, each mass containing about 1⅔ grains.

Each lobe of the thyroid produces about 26.8 per cent. of the powder. Three capsules are therefore equivalent to one lobe of the gland, or the therapeutic unit.

Alkaloidal preparations have been made, but their strength is not uniform and their value is doubtful.

THE SERUM TREATMENT OF DIPHTHERIA.

H. F. Filatow (*Russian Archives of Pathology, Medicine, and Bacteriology*, vol. i, Jan. 20, 1896), speaking of the results derived from the serum treatment, refers to the statistics given by him in his Lectures on Infectious Diseases in Children (Moscow, 1895). In more than five thousand cases treated in this way, the mortality was eighteen per cent. In this paper Filatow has collected 832 cases, lately reported by general practitioners from different parts of Russia who have been employing the serum treatment, the mortality being 19.2 per cent. In agreement with the majority of the observers, the author considers it necessary to combine the use of the serum with local treatment, for this diminishes both the duration of the disease and the time during which the patient must be isolated. As regards immunity, although experiments made on animals and some statistics of pre-

ventive inoculation in men during diphtheria epidemics speak in favor of the preventive treatment, the fact must be taken into account that there is an individual immunity to diphtheria, and it cannot be said for certain that without this inoculation the individual would have contracted diphtheria. It has not yet been established that albuminuria occurs more often under this new treatment. If the antitoxin influences the kidneys, it does so only after a lapse of several days. Further experience has shown that the earlier the treatment with antitoxin commences, the less the liability of kidney complications. The albuminuria, therefore, does not afford even the slightest contra-indication to the antitoxin treatment.—*British Medical Journal*, March 21, 1896.

CURETTAGE OF THE UTERUS.

BALLANTYNE, in the *Edinburgh Medical Journal* for April, 1896, after discussing this operation at some length, goes on to say that too great care cannot be taken of all the preparatory arrangements in cases of curetting, and success will reward him who is most particular in these matters.

If it be possible to choose a time, the week following menstruation ought to be fixed upon, and the writer usually curettes the day after the flow has ceased, in order to give the uterine mucosa the longest possible period to revive before the irritation of the next menstrual epoch comes on. The cases in which curettage is employed for post-abortum hemorrhage and sepsis and for post-partum septicemia do not come under the action of this rule.

The patient ought to be kept in bed the day before the operation; the urine should be carefully tested; and some form of opening medicine should be given, followed by an enema on the morning of the day of curetting. The vaginal canal should be douched on the evening preceding the operation, and also in the morning, and special attention should be paid to the thorough cleansing of the mons veneris and external genitals.

The instruments employed will vary with the individual tastes and requirements of the operator; the following are those which the author usually provides: A vaginal speculum (Marion Sims's, or a modification thereof, *e. g.* Auvard's retaining speculum), and one or two copper retractors; two or more strong-toothed volsellæ provided with clips; a set of uterine dilators, preferably Hegar's cones or Auvard's new hollow metal rods; sharp and irrigating curettes, preferably Recamier's double scoop, Thomas's spoon-saw, and Rheinstaedter's flushing curette (curetting forceps and the blunt curette he never uses); a set of three or four uterine sounds, or Playfair's probes armed with cotton wool; a male catheter, No. 10; an intra-uterine douche of an approved pattern; a pair of curved packing forceps; and a sufficient number of pledgets of gauze (instead of sponges), and a long strip of iodoform gauze for packing the uterus, and another for the vagina. There ought also to be ready at hand a bottle of iodized phenol for cauterizing the interior of the uterus, an anesthetic, and antiseptic solutions (*e. g.*, perchloride of mercury, 1:5000). Where possible the instruments ought to be of metal, and should be previously boiled for fifteen minutes in soda solution (one to three per cent.).

The operator ought to take the same personal precautions that he would in cases of abdominal section or hysterectomy. This is a very important matter, especially in the cases in which curettage is performed, notwithstanding the existence of acute or chronic tubal or perimetric conditions. He ought, therefore, to be rigorously careful with regard to the thorough cleansing of his hands, and should wear a waterproof apron and sleeves. His assistant and the nurse ought to be equally careful.

The patient, having been chloroformed, ought to be placed in the lithotomy (dorsal) posture rather than in the left lateral, on a table and not in bed, facing a good light. The field of operation should be protected with sterilized towels, and the hips should be raised by and rest upon a pad of antiseptic cotton covered by mackintosh. The patient may be held in position by assistants, or in default one of the many "crutches" may be used.

Before proceeding to the actual operation, fifteen minutes should be definitely set aside for the thorough cleansing and disinfecting of the external genitals and vagina. The hair ought preferably to be shaven off, and the parts, both vulvar and vaginal, are to be thoroughly scrubbed with soap and water, and thereafter washed with perchloride solution (1:4000). Too much care cannot be taken to insure the intra-vaginal cleansing, and pledgets of gauze (instead of sponges) in sponge-holders may be used to scrub the walls, the fornices, and cervix. The urine should be drawn off before the operation begins.

The Sims speculum is passed, and held in

position by the assistant or nurse; then the operator lays hold of the cervix with two volsellæ, one grasping the anterior, the other the posterior lip. The use of two volsellæ distributes the traction upon the cervix better, and minimizes the risk of laceration of the tissues. The uterus is then to be dragged gently downwards till the cervix is well within the range of sight and touch. Where the uterus is fixed this cannot, of course, be done, and ought not to be attempted; the cervix should then be simply fixed, and the speculum so adjusted as to give the best possible view of the parts without downward displacement. We should never attempt to introduce the curette without seeing the orifice of the cervical canal into which we are causing it to enter.

By means of a careful bimanual examination, ascertain as accurately as possible the exact position and inclination of the uterus, so as to know the direction in which the dilators and curette are to be inserted. Then, having fixed the cervix, begin the dilation. Of course, in post-partum cases this part of the process will very probably be unnecessary. Introduce first one of the smallest sizes of the Hegar dilators, which has been warmed and covered with carbolized vaselin. Begin, in most instances, with a No. 3 or 4, and let it pass in without the use of force, making sure always that it is being passed in the right direction. Leave it *in situ* whilst the next (larger) size is being warmed and greased, then withdraw it and introduce No. 5, and so on till No. 13 or 14 passes in easily. The author has given up entirely the use of metal dilators with separate blades, for he regards them as unavoidably dangerous. The traction exercised upon the anterior and posterior lips of the cervix during dilatation should be made equal, and care should be taken that the teeth of the volsellæ do not protrude into the cervical canal. The rate of progress of the dilatation will vary in different cases according to the amount of resistance offered by the cervical tissues; but from fifteen to twenty minutes ought not to be too long to allow for the completion of this part of the operation.

The canal being now sufficiently open, it is well to dip the forefinger in an antiseptic solution and introduce it into the uterus before passing in the curette. This is an important precautionary measure; if anything is felt in the interior of the uterus it may thus be removed by the finger alone. The curette must then be introduced; it ought to be applied in a systematic fashion, first to the anterior, then to the posterior, and then to the lateral walls of the uterus; finally, the fundus and the upper uterine angles should be scraped. The instrument should be guided in these manipulations by the operator's left hand placed on the patient's abdomen. After each scraping —which is, by the way, accompanied by a creaking or crackling sound, "*le cri uterin*" —we should withdraw the curette and wash off its contents for future microscopic examination into a cup of water placed near at hand. In the next place, the uterine cavity should be flushed out either with an ordinary intra-uterine douche or with a flushing curette. Then iodized phenol is to be applied to the interior of the uterus on armed sounds or probes, care being taken to protect the vaginal walls during the process. By means of a pair of curved dressing-forceps, firmly pack the uterine cavity with a strip of iodoform gauze about two or three feet long and one inch wide. Put a plug of the same gauze in the vaginal canal, and a pad of antiseptic absorbent wool over the vulva, and keep the whole in position with a bandage. The patient is then put back to bed and treated as after any similar operation.

Of course, the operative details will differ slightly with the condition which has constituted the indication; but the line of conduct laid down above is that which will be found most generally useful. Of the technique in some of the rarest indications the author has not thought it necessary to speak.

After the operation the patient is to be kept at rest. The urine may require to be drawn off the same evening; but often this is quite unnecessary. The plug is usually removed on the third or fourth day (and with it the intra-uterine strip of gauze is taken away), and a smaller one put in its place; but in the instances in which curettage has been performed for suppurative conditions the gauze may require to be changed within twelve hours, and twice daily thereafter until it comes away dry. This latter statement applies especially to the post-abortum and post-partum cases. Douching is indicated after the removal of the plug. The patient should be kept in her bed for a week, or for ten to fourteen days in the more serious cases. She ought to rest at the next menstrual epoch, as the flow may then be excessive. When the uterus has been curetted as a measure preliminary to another operation, the second operation may be proceeded with at once, or not till four or five days later.

Marital relations ought not to be resumed until eight weeks after the curetting. By this delay, conception, if it occur, is more likely to lead to a successful gestation. At the same time cases are on record in which impregnation has occurred within a month of the operation. Bossi has found that the new uterine mucosa can grow a decidua twenty-five days after curettage; but it does not at all follow that the decidua thus formed will be satisfactory.

If curettage be carried out in the way above indicated, and especially if rigorous antiseptic precautions be taken during the operation and uterine drainage maintained after it, the risk will be reduced to a minimum, and the chances of complete success in properly chosen cases will be largely increased.

THE TREATMENT OF ALOPECIA.

In the *Journal des Praticiens* of March 28, 1896, Brocq has a brief article upon this subject. He recommends the employment of the following prescriptions:

℞ Resorcin, 1½ grains;
Hydrochlorate of quinine, 3 grains;
Pure vaselin, 1 ounce.

This is to be applied, covering only a limited area at any one application, to that part of the scalp which is devoid of hair or from which the hair is rapidly falling. If the falling of the hair persists after the employment of this prescription it is well to incorporate with it five to fifteen minims of the tincture of cantharides, or in other cases the following may be used:

℞ Resorcin, 3 grains;
Hydrochlorate of quinine, 5 grains;
Precipitated sulphur, 30 grains;
Pure vaselin, 1 ounce.

Should either of these ointments produce much irritation of the scalp, so that a burning sensation is produced which is too uncomfortable to be borne, it is well to apply after their removal an ointment composed of 20 grains of borax to 100 of vaselin. After the irritation is relieved, more feeble preparations of resorcin and quinine can be employed. One prescription which may be used is composed of:

℞ Salicylic acid, 5 grains;
Resorcin, 3 grains;
Hydrochlorate of quinine, 5 grains;
Precipitated sulphur, 30 grains;
Pure vaselin, 1 ounce.

And if this produces much irritation of the skin, the ointment of vaselin and boric acid already named may be employed, or one composed of vaselin with one or two per cent. of carbolic acid added to it.

Should the falling of the hair be associated with seborrheic eczema, it is often well to employ a mercurial ointment. One of the best of these is an ointment of the yellow oxide of mercury varying in strength from 1 in 25 to 1 in 10, according to the severity of the trouble. This should only be rubbed upon isolated patches at a time. After it has been employed and an alterative effect upon the skin produced, a prescription composed as follows may be used:

℞ Resorcin, 4 grains;
Salicylic acid, 7 grains;
Pure vaselin, 1 ounce.

Should the condition of the scalp be excessively greasy, the ointment which has been previously employed and the natural oil of the skin should be removed by washing the scalp with a weak solution of ammonium or by using Castile soap and warm water. Under no circumstances should the oily preparations be used continuously without the scalp being cleansed every now and then by some such process.

THE ACTION OF THYROID GLAND ON GROWTH AND OBESITY.

Bourneville (*Progrès Médicale*, Feb. 1, 1896) gives tables showing the action of thyroid gland on growth and obesity. In three cases of myxedematous idiots, aged from fourteen to thirty years, the striking points were a loss of weight and an increase of waist measurement — that is, of growth. It was then tried in three cases of obesity in idiots (two macrocephalic, aged eleven and twenty-eight, and one epileptic aged eleven). Their growth under treatment was proportionally more in four, five, or six months than the average growth of eighteen untreated imbeciles or epileptics during their tenth, eleventh, and twelfth years, which were taken as more nearly approaching normal children to control these experiments. This growth is still more apparent when compared with the condition before the thyroid treatment, when growth was absent or retarded. As regards obesity, two of the idiots lost weight rapidly during treatment, while the third gained during treatment and lost weight rapidly afterwards. Otherwise the rule was that (1) there was a rapid loss of weight during treatment; (2) after a certain time the gland lost its effect and the weight remained sta-

tionary; (3) generally, shortly after the treatment ceased, the weight rose again. Hence the necessity of breaks in the treatment. In the epileptic case the number of fits increased while the gland was being given.

These results agree with those published by Hertoghe regarding the influence of thyroid gland on children whose growth has been retarded by causes other than myxedema (rickets, albuminuria, debility, etc.).—*British Medical Journal*, March 21, 1896.

ALCOHOL AND DIGESTION.

For several months the *American Journal of the Medical Sciences* has contained a continued article by CHITTENDEN and MENDEL on this topic. In the April issue this is concluded in the following words:

Pure ethyl alcohol, the active agent in all so-called alcoholic liquors, when present in small amount—say one or two per cent. of absolute alcohol, equal approximately to two to four per cent. of proof spirit—has little or no action upon the digestive power of the gastric juice. There is, indeed a slight tendency for such amounts of alcohol to increase somewhat the proteolytic power of the enzyme—in other words, the digestive power on proteid foods may be slightly increased. As the percentage of alcohol is raised, retardation or inhibition of proteolytic action becomes pronounced, although not very marked until the digesting mixture contains five to ten per cent. or more of absolute alcohol. With fifteen to eighteen per cent. of absolute alcohol, digestive action may be reduced one-quarter or even one-third. Especially important is the fact that the extent of retardation by a given percentage of alcohol varies greatly with the strength or activity of the gastric juice and with the digestibility of the proteid material. Everything else being equal, the greater the strength or digestive power of the gastric juice the greater the inhibitory action of a given amount of absolute alcohol. It is, therefore, impossible to make a general specific statement regarding the action of given percentages of alcohol under all conditions. Our results agree essentially with those obtained by Sir William Roberts, who found that in the presence of less than ten per cent. of proof spirit (five per cent. of absolute alcohol) there was no appreciable retardation of gastric digestion. With ten per cent. of proof spirit, retardation was only barely detectable, while with twenty per cent. it was quite distinct. Beyond this point the inhibitory effect of alcohol increased rapidly.

On the proteolytic action of the pancreatic juice, absolute alcohol exercises a more marked influence, the presence of even two or three per cent. being sufficient to produce a distinct retardation of digestive action. Still, as in the case of gastric digestion, the exact amount of retardation is greatly dependent upon the digestive power of the pancreatic fluid. When the amount of absolute alcohol present in the digesting mixture is less than one per cent. the inhibition of proteolytic action is very slight, provided the ferment is fairly vigorous in its action.

On the digestion of farinaceous foods by the saliva, absolute alcohol has no very marked influence. With active saliva not greatly diluted, the presence of even five per cent. of absolute alcohol may lead to a slight increase in digestive power. Large quantities of alcohol cause retardation of amylolytic action, but even ten per cent. of absolute alcohol causes only a slight retardation. As this percentage of absolute alcohol is equal to at least twenty per cent. of proof spirit, it follows that pure alcohol, free from admixture, is not liable to interfere materially with the digestion of starchy foods by the saliva, nor presumably by the pancreatic juice.

Strong alcoholic beverages, such as whiskey, brandy, rum, and gin, containing ordinarily about fifty per cent. of absolute alcohol and with only a small amount of solid or extractive matter, have an action upon gastric digestion practically proportional to the quantity of alcohol present. Thus, with a vigorous gastric juice, the presence of even ten per cent. of whiskey results simply in a slight retardation of digestive action. The same is true of brandy, gin, and rum. With a weak gastric juice, the retarding action is much greater. When digestive action is fairly vigorous the presence of small percentages of whiskey causes practically no retardation; indeed, there is even a slight suggestion of increased digestive action in the presence of three per cent. of whiskey, much the same as was observed in the experiments with absolute alcohol. In the presence of twenty per cent. of whiskey, on the other hand, digestive activity may be reduced one-fourth, and when the gastric juice is very weak from scarcity of the active ferment, then even small amounts of whiskey may exercise a very marked retarding effect upon the digestive process. Such retardation of gastric digestion as whiskey, brandy, gin and rum produce

is connected mainly with the presence of alcohol or other volatile matter contained in the liquor, the solid matter present in the fluid not showing, as a rule, any evidence of responsibility for the inhibitory action. The conclusion is obvious that pure whiskey, brandy, rum and gin are no more deleterious to gastric digestion than corresponding strengths of absolute alcohol, and, further, that in the healthy individual these liquors can be considered to impede the gastric digestion of proteid foods only when taken immoderately and in intoxicating doses.

With reference to the composition of whiskey as bearing upon possible variations in the action of this fluid on gastric digestion, our results show merely a variation in the percentage of alcohol present, suggestive of more or less addition of water. The few results obtained by the writers in this direction show variations in the percentage of alcohol ranging from thirty to fifty per cent. There was likewise some variation in the quantity of tannin present, but in no case was the amount of the latter large.

As to so-called fusel oils, our results show that the higher alcohols, supposedly contained in such oils in small quantities, tend to increase rather than decrease the proteolytic action of the gastric juice. Thus, methyl, propyl, isobutyl and amyl alcohols all increase somewhat the digestive power of the gastric juice when present in small amount. Large quantities have a decided inhibitory action. Plainly, however, if these alcohols are common impurities in whiskeys, brandies, and related liquors, they do not exercise any deleterious influence upon the proteolytic action of the gastric juice.

On pancreatic digestion whiskey is quite active. The sensitiveness of the pancreatic ferment to this form of alcoholic liquor is quite marked. Further, the retarding action of a given percentage of whiskey is greater than that of a corresponding percentage of pure alcohol, thus indicating the presence of an additional inhibitory subtance which is apparently a part of the solid matter of the whiskey and is undoubtedly connected with the acidity of the fluid. Brandy and rum have essentially the same action upon pancreatic digestion as whiskey. Both retard proteolysis quite noticeably, and with both fluids the retardation is somewhat greater than that caused by a corresponding strength of alcohol.

The higher alcohols, such as are present in fusel oils, have a somewhat greater inhibitory action upon pancreatic digestion, *i. e.* trypsin-proteolysis, than ethyl alcohol; but when it is remembered that these alcohols can be present in whiskey, brandy, etc., only in very small quantities, it is seen that they can exercise very little influence in modifying the action of alcoholic liquors upon pancreatic proteolysis.

On the digestion of farinaceous foods by the saliva, whiskey and brandy have no retarding influence when present to the extent of five per cent., provided the saliva is not too greatly diluted. Present in larger quantities or when mixed with weak or greatly diluted saliva, they exert a retarding influence upon amylotic action which is out of all proportion to the contained alcohol. The inhibitory action is connected mainly with the acidity of alcoholic fluid, for on neutralization of this acidity the inhibitory action of the liquor ceases. Rum differs from whiskey and brandy in having a somewhat greater inhibitory action, due simply to the greater acidity of this fluid, and is nowise connected with the alcohol present.

The heavier alcohols—amyl, butyl, propyl, etc.—all tend to increase the amylolytic action of the saliva when present in small quantity.

Wines, as a class, when present in small amount, have little or no action upon the chemical processes of gastric digestion. In small amount they may even increase somewhat the rate of digestive action. In larger quantities they have more or less of a retarding effect which is dependent more upon the character and amount of the solid matter present than upon the contained alcohol. Thus with wines containing ten per cent. of alcohol, the alcohol is of minor importance so far as the influence of the fluid upon the solvent or digestive power of the gastric juice is concerned.

On pancreatic digestion, wines have a far greater inhibitory action than the stronger alcoholic liquors. This action, under ordinary circumstances, is almost entirely independent of the content of alcohol, and is very closely connected with the acidity of the fluid. Thus, a strongly acid wine, like a claret with only ten per cent. of alcohol, has a far greater retarding action on trypsin-proteolysis than a sherry with twice that amount of alcohol but with less acidity.

On salivary digestion, wines as a class show a very powerful inhibitory effect — an effect which is due almost entirely to their acid properties. Thus, when the acidity of a wine

is neutralized, it loses completely its inhibitory effect on salivary digestion.

Malt liquors in small quantities are without any marked influence on the digestive power of the gastric juice. In larger quanties they cause an inhibition of proteolysis which is entirely unconnected with the small amounts of alcohol present, but directly traceable to the comparatively large amounts of extractives they contain.

On pancreatic digestion the malt liquors as a class exert an inhibitory effect, which, however, is not very pronounced. The retarding action is due mainly to the character of the solid or extractive matters present in the liquors, and is practically unconnected with the content of alcohol. The inhibitory action of malt liquors is far less pronounced than that of wines.

On salivary digestion malt liquors have a very great retarding effect, especially when the saliva is quite dilute. With saliva less diluted the retarding action is far less pronounced. The inhibitory action of these liquors is due solely to their acidity. Remove the acidity by neutralization with an alkali, and the inhibitory action disappears.

Finally, it is to be plainly understood that these conclusions apply solely to the influence of the various liquors studied upon the purely chemical processes of digestion—*i. e.*, upon amylolysis and proteolysis. The results recorded do not afford data for drawing any broad or general conclusions regarding the influence of alcoholic drinks upon digestion or alimentation, since they throw no light upon possible modifications of the action of alcohol and various alcoholic fluids, upon the digestive action or solvent power of the saliva, gastric juice, and pancreatic juice, the three important fluids of the body; but before we can answer the question, How do alcoholic fluids affect digestion? we must ascertain the influence of these fluids upon the secretion of the digestive juices and upon the absorption of the products of digestion, as well as upon peristalsis, and not until these points have been thoroughly studied shall we be able to understand fully the action of these beverages upon the whole process of digestion.

COCAINE AND COCAINISM.

In the *Revue de Thérapeutique Medico-Chirurgicale* of March 15, 1896, SALLARD contributes a paper with this title, in which, after a brief historical *résumé* of the influence of this drug upon various portions of the body, he proceeds to discuss the causes and symptoms of acute and chronic cocaine poisoning.

After stating that these untoward symptoms arise from subcutaneous and submucous injection, and from the use of large quantities upon the mucous membranes, particularly the urethra, he reminds us that Réclus, after a careful study, has concluded that on an average three grains of cocaine is the safe limit for anesthetic purposes. He also quotes an experience of Abadie's in which, after the injection of two thirds of a grain of cocaine into an eyelid before an operation upon ectropion, the patient, aged seventy-one years, was seized with coma which lasted for five hours, death ultimately occurring.

He also quotes an experience of Hugenschmidt, a celebrated dentist of Paris, who had a case of syncope lasting half an hour as the result of injecting ten drops of distilled water into the gum, thus illustrating the fact that injections under mucous membranes are capable of producing symptoms independently of the presence of cocaine. We believe this patient had already suffered from an attack of acute cocaine poisoning as the result of an injection. No case of death, however, has resulted after the absorption of a small amount of cocaine. There is one case, however, of a death from the injection into the urethra of a solution containing eight grains of this drug. The symptoms of acute poisoning under these circumstances are variable: sometimes they are simply those of a brief and fleeting vertigo; in other instances there is great excitation of the nervous system and a tingling in the extremities, with flushing of the skin followed by pallor; in other instances there are gesticulations and the patient passes into a condition of active talkative delirium. The latter symptoms are seen most frequently in women. In other instances the symptoms are those of marked depression. The vertigo produces nausea or sensations similar to those of sea-sickness. There is marked feebleness and the patients are in a condition of semi-stupor. There may also be palpitation of the heart and some vomiting. There is marked pallor of the face, dilatation of the pupils, coldness of the extremities, and profuse sweating. Should convulsive symptoms come on, the intoxication is of course exceedingly profound and the prognosis grave. Convulsions are at first tonic, then clonic in character, sometimes resembling those of ordinary eclampsia. There is marked dyspnea, probably due to tetanic contractions

of the respiratory muscles, and cyanosis is present from similar reasons, the cause of death being failure of respiration. The duration of these untoward symptoms produced by poisoning by cocaine is usually from one to two hours, although of course they may last for a longer period of time. Marked insomnia is very apt to follow these symptoms.

Sallard points out that Gauthier has stated that the administration of nitro-glycerin will greatly diminish any danger connected with the use of cocaine, and that Glück has claimed that by the use of phenate of cocaine these symptoms can also be avoided.

Goesel has also proclaimed the advantages of tropacocaine as less likely to produce depression of the heart and other untoward symptoms.

Magitot, after stating that only very minute quantities should be used for producing local anesthesia under the skin or mucous membrane, adds that cocaine injections should never be used in neuropathic patients or in those suffering from cardiac disease or chronic affections of the respiratory passages. Great care should also be taken that it is not introduced into the veins. The patient who receives cocaine instillations should also always be placed in the horizontal position, save in those instances where in operations upon the mouth or head a semi-reclining or erect position is indispensable. Again, the greatest care should be used that the hydrochlorate of cocaine is absolutely pure and not mixed with other alkaloids which may possess a toxic influence. It is also well to use the instillations gradually rather than to inject them all at once. Magitot believes that cocaine possesses over chloroform and ether incontestable advantages.

Should symptoms of acute intoxication by cocaine develop in any case, the treatment is to place the patient flat on his back and use slappings of the face and chest with hot and cold towels, ammonia by inhalation, and if necessary nitrite of amyl, and hypodermic injections of ether and caffeine.

Chouppe has recommended that from one-third to one-half a grain of morphine be given hypodermically.

In regard to chronic intoxication by cocaine, or what has been called cocaino-mania, Sallard tells us that this habit is constantly increasing in France. The symptoms consist of loss of appetite, cardiac palpitation, headache and vertigo, finally followed by hallucinations or delusions. The following treatment is to be instituted:

In the first place, abstinence from cocaine is to be insisted upon under proper control of attendants or in a hospital. The method of decreasing the cocaine need not be instantaneous, but it should be tapered off rapidly. Hydrotherapeutic measures designed to increase nutrition should be resorted to, and iron, quinine, and arsenic, with heart tonics, such as caffeine and sparteine, should be employed. Chloral, trional or sulphonal may be employed to overcome insomnia, and the whole effort of the physician should be directed by means of appropriate exercise and a regular method of life to improving the patient's general nutrition.

THYROID FEEDING IN GOITRE.

STABEL read a paper on this subject before the Berliner Medicinische Gesellschäft (*Deutsche Med. Woch.*, Feb. 20, 1896), based on ninety-three cases, twenty-five of which were treated with fresh thyroid gland (20 to 34 grammes in the week) and the remainder with thyroid tablets. Of the twenty-five, all but one took the fresh gland well; in the exceptional case it had to be discontinued owing to the vomiting induced by it. A positive result was obtained in all the cases, but only amounted to improvement. The measurement round the neck decreased 3.3 centimeters on an average, the maximum decrease being 6.8 centimeters. In only four cases was the cure complete, and two of these relapsed later. Four to six weeks after the discontinuance of the treatment the goitre began to increase in size again. In most cases a slight acceleration of the pulse was noted. As regards the tablets, the same general results were obtained, but the average diminution in the neck measurement was only nine-tenths of a centimeter. In tablet form the thyroid substance is more apt to produce unpleasant symptoms than is the fresh gland given in corresponding amount. The acceleration of the pulse persisted for some time. Thyroid treatment is not harmless. The author is of opinion that it is contra-indicated in Graves' disease. Finally, he records a case in a woman aged fifty, who first noticed swelling of the thyroid gland a year previous; under thyroid treatment the goitre almost disappeared, but for forty days after the discontinuance of the treatment a relapse occurred; three weeks after the treatment was resumed the goitre again greatly diminished in size.

In the discussion which followed, EWALD

said he had found the thyroid treatment of most use (1) in young individuals with goitre, especially in chlorotic girls, and (2) during the first period of the treatment, for later the circumference of the neck remained the same. In no case had he seen a total disappearance of the goitre. Ewald only used tablets, and has recently apparently discontinued the treatment in these cases. MENDEL and SENATOR had both treated cases of Graves' disease with thyroid, but without effect. In one case mentioned by Senator a slight alimentary glycosuria appeared during the treatment.—*British Medical Journal*, March 20, 1896.

THE REMOVAL OF CERUMEN FROM THE EXTERNAL AUDITORY CANAL.

In a practical note upon this subject we are told by LAURENT that under no circumstances should cerumen be removed from the ear by the use of metal instruments such as tweezers, stylets, or similar instruments which may do damage, unless the physician be an experienced otologist and familiar with the technique of removing foreign bodies from the ear; for by the use of these instruments, aside from the ordinary damages which may be done by bruising, it is possible to produce furunculosis of the external auditory canal through infection of the glands, and there is also danger of injuring the tympanic membrane, or of causing hemorrhage from the canal, or deafness and vertigo. By far the safest and most efficient plan for the removal of wax under these circumstances is the use, by means of an absolutely sterile syringe, of water which has been sterilized by boiling and which is as hot as the patient can bear. If desired, a very small portion of carbolic acid may be added for its antiseptic influence. After the water is sucked up into the syringe, care should be taken that the point of the instrument is elevated and that all air is driven out of it, as the injection of bubbles of air into the external auditory canal produces a very disagreeable and painful sensation in the ear. A small pitcher or vessel, usually used for receiving liquid when the ear is being irrigated, is held tightly against the skin beneath the ear, and then the water is injected with gradually increasing force until the mass is loosened and readily removed. Great care must be exercised that the first drops in particular are not driven into the ear with too much force, for if force is used vertigo and pain will result. In other words, no forcible measures should be used under any circumstances for the removal of such accumulations as we are speaking of. Five or six full syringefuls of water are usually sufficient. In other instances irrigation by means of a fountain syringe held eighteen inches or two feet above the ear of the patient is more efficient than the piston syringe. If the mass in the ear is so hardened that the injection of water will not soften it, it is well to prescribe as follows:

℞ Bicarbonate of sodium, 15 grains;
Glycerin, 1 drachm;
Water, 1 drachm.

Three times a day the patient drops into the ear by means of a spoon, or with a medicine-dropper, five or ten drops of this solution, which has previously been warmed, and after it has remained there for a few minutes a pledget of cotton should be placed in the external auditory canal in order to preserve the moisture. In the course of a day or two the cerumen will be so softened by this solution that it will be easily removed. If it is perfectly free in the auditory canal it can, of course, be removed by a scoop or tweezers, but these are never to be employed unless the concretion is already loosened. After the removal of the mass the ear should be thoroughly dried by means of absorbent cotton, and a small pledget of absorbent cotton be placed in the external auditory canal to protect the part from cold. If these measures are used, serious results never occur, and the deafness which has been produced by the obstruction in the canal speedily disappears.—*Journal des Praticiens*, March 28, 1896.

TRAUMATISMS COINCIDENT WITH LABOR; THEIR PREVENTION AND REPAIR.

JARMEN tells us in the *American Medico-Surgical Bulletin* of March 28, 1896, some interesting facts as to the injuries produced by childbirth and how to prevent many of them; here, as he says, the fact still remains that, in spite of all precautions, lacerations of the cervix will occur, and it is the writer's belief that all such lacerations should be repaired—provided the tear is of more than the first degree, and that no contra-indications on account of the condition of the patient exist, except post-partum hemorrhage requiring uterine tamponade.

The closure of one avenue of infection, the prevention of one of the most frequent causes of subinvolution with its long train of symptoms, the removing of the possibility of an

after-operation, and in fact the right that the patient possesses of being left in a condition as nearly normal as possible, all demand the repair of a cervix which has been lacerated.

It is not necessary to have a large number of assistants or many instruments. The repair can be accomplished single-handed, aside from the necessary presence of some one to administer the anesthetic. The patient having been so placed that the buttocks are well over the edge of the bed, and the thighs flexed over the abdomen, the anterior lip of the cervix should be grasped with a strong tenaculum, preferably of the double variety, and drawn down to the vulvar outlet. Personally, so that he may be forced to carry the least number of instruments necessary, Jarmen uses a small artery clamp for a needle-holder, and, arming a curved surgeon's needle with silkworm-gut, he proceeds to pass the requisite number of sutures to close the laceration. The sutures should be tied more firmly than in any other surgical procedure, since the rapid involution of the cervix would otherwise soon render them too lax to keep the surfaces in apposition.

The writer has found silkworm-gut preferable to any other suture material, from the ease of rendering it sterile by boiling, and from its more absorbable character. It may be left *in situ* any length of time, and removed at the operator's convenience.

Lacerations of the perineum have received far more thought during the last ten years than ever before, probably owing to the great strides that have been made in gynecology during this time, and, as it has been determined that they play no small rôle in the causation of pathological conditions, methods of prevention and repair have assumed greater importance. It is not at all infrequent to hear men say that they never see such accidents among their own patients. The old adage, that "None are so blind as those who will not see," is certainly appropriate in the cases of such observers, or, rather, non-observers. That lacerations of the perineum will occur even in the hands of the most expert is a well known fact. Undoubtedly, however, preventive measures are far more applicable and practicable in lacerations of the perineum than in those of the cervix.

Again, it is necessary to consider the mechanism of the causes which produce laceration of the perineum, before we can best determine upon the adoption of preventive measures.

The writer departs somewhat from the usual nomenclature, and, in place of speak- of the three degrees of laceration, refers to them as internal, external incomplete, and external complete. This division certainly will render the remarks upon repair more intelligible. The internal laceration, again, must be divided into the tear (which involves the vaginal wall) and the subcutaneous variety. The first of these nearly always takes place as a result of operative procedures. The gradual dilatation of the perineum is as necessary as that of the cervix, if lacerations are to be avoided. Old primiparæ, whose perineal tissues are less resilient, are very much more likely to suffer from traumatisms of this character. It would naturally follow that, if the uterine contractions are very firm and likely to expel the head before the proper dilatation of the perineal floor has been obtained, the obstetrician must use such preventive measures as are within his power. While the writer does not say dogmatically that it is best to confine such women in the lateral posture, he has personally found this course preferable.

With the patient in Sims' position, it certainly seems easier to control the advance of the head by pressure upon the occiput. The first and second fingers of the right hand rest upon the occiput, and the thumb back of the anus; this gives perfect control over the further descent of the head, and at the same time produces more perfect flexion. It is wonderful what this intermittent dilatation of the perineum will accomplish. It would seem that at this time chloroform anesthesia is a most helpful adjuvant; it lessens the intensity of the pains and prevents misguided efforts upon the part of the patient.

When dilatation is complete, the head should be delivered between the pains, at a time when the vulvar borders are least tense. This can be readily accomplished by passing two fingers into the rectum and making direct traction upon the chin, or,—a method which is perhaps better,—upward pressure upon the malar prominences, the other hand preventing the too rapid advance of the head.

The overdistention which is coincident with the delivery of the head is almost certain to induce a firm contraction of the uterus. It is here that the obstetrician must be on the alert, or else the perineum may be torn by the too rapid delivery of the shoulders. To avoid this accident, it is only necessary to grasp the head firmly as soon as it has been expelled, and to prevent the delivery of the shoulders until after the cessation of the

next pain, when it can be accomplished with less risk to the soft parts. The writer is convinced that many perineums which have escaped laceration at the time of the expulsion of the head, are torn by the too rapid delivery of the shoulders.

If it is evident that one's efforts in this direction are not successful, and that laceration of the perineum is impending, episiotomy should at once be performed. The vulvar outlet enlarged by two lateral incisions is certainly a more favorable condition for repair than one which has been torn.

Mention has been made of the internal subcutaneous laceration; in reality it should be denominated submucous. This tear is confined to the deep muscular structures of the pelvic floor, and any one who has occasion to work in gynecological clinics will recall how many symptoms accompany such a lesion—prolapsus of the uterus and vaginal walls being almost constant. This tear is nearly always due to the long pressure of the head upon the pelvic floor, and its prevention is to be found in the timely application of forceps and extraction.

These, then, are some of the preventive measures which may be adopted, and in a great number of cases they will prove successful. There will still remain a certain proportion of cases where laceration will occur, and where repair will be necessary. It should be the routine practice, after the completion of the delivery, to examine by sight the condition of the pelvic floor. It is not at all infrequent to find, upon separation of the vulvar orifice, that internal laceration has taken place, while the external or cutaneous portion of the perineum may be intact. This traumatism is one productive of a long chain of symptoms, unless repaired.

The question of anesthesia is one which will depend much upon the extent of the tear; if only a few stitches are necessary, no anesthetic need be given, for the parts are so benumbed by pressure that but little pain is experienced. If the tear, on the other hand, is extensive, it is better to administer the anesthetic, so that the surfaces may be more perfectly coapted.

The method of operating will vary with the character of the traumatism. If the tear is entirely internal, its upper angle should be exposed, and a needle armed with silkworm-gut should be passed from one side to the other of the laceration, care being taken that the suture is entirely buried. Sutures may in this way be passed at intervals of about a quarter of an inch until a sufficient number have been adjusted to close the wound. The sutures should be tied firmly, to allow for the subsidence of the edema of the parts. If the tear is external, incomplete—that is, does not involve the sphincter—sutures may be passed in the same way. If the tear, however, involves the fibres of the sphincter, the operation is somewhat more complicated. It is best here first to convert the complete laceration into an incomplete one by sewing up the torn gut and sphincter. The rent in the gut should be repaired by passing silkworm-gut sutures from the rectal side into the wound, and then back into rectum, so that when the sutures are tied the knots will be in the rectum. The several ends of the sphincter must be found and carefully united by means of a suture which passes entirely around the depth of the wound. When the sphincter has been properly united, the other steps of the operation will be the same as has already been stated. The field of operation will be rendered distinct if sterilized cotton is passed into the vagina to absorb the flow of blood from the cervix.

PENTAL: 150 ADMINISTRATIONS, WITH ONE DEATH.

At a recent meeting of the London Society of Anesthetists, Dr. STALLARD of Manchester read a paper on Pental. The preparation of pental was explained and its literature narrated. Being volatile at the ordinary temperature of the room, it is necessary to administer it by the closed method, with the admission of as little air as possible. If exhibited on a piece of lint a large quantity of the drug is required; two cases anesthetized by this method were long in becoming unconscious, and both complained of violent headache on recovery. In all the other cases Clover's portable ether-inhaler was used. Two drachms were poured into the receiver, the indicator placed at zero, and the patient encouraged to fill the small bag with expirations; the indicator was then turned rapidly but evenly to 3; rarely was it necessary to turn F. Pental may be given more rapidly than ether, and there is none of the coughing, struggling, and fighting for breath which are so characteristic of the latter drug when given alone without the previous exhibition of N_2O. No restriction was placed on Stallard's patients with regard to diet, and in only one case was there after-vomiting. In all the cases the patients sat in a dental chair, the

head being in an easy position midway between flexion and hyper-extension. The horizontal position would be much safer, as signs of cardiac failure frequently occurred in the cases narrated, pental in this respect resembling chloroform. The pulse was quickened, and likewise the breathing, and then the pulse became fuller and bounding, with dilatation of the capillaries of the face, evinced by extreme flushing similar to that observed when nitrite of amyl is inhaled. Swallowing movements were observed, but never any coughing or struggling. Screaming may occur, and dreams of a pleasant nature are frequently experienced. Spasms, tonic or clonic, are occasionally present unless the anesthesia be deep. Under profound pental narcosis the pupils dilate and the eyeballs invariably turn upwards under the upper lids; in some cases the arm when lifted drops helplessly to the side. At the height of anesthesia the pulse becomes small and may be running. There is no cyanosis or duskiness of the features, and stertor is extremely rare. Micturition and defecation have never been observed. Opisthotonos and clonic twitchings of muscles were noted in a few cases. The patients were generally tranquil. The breathing could hardly be heard, and this constitutes one of the dangers, the drug in this respect acting like chloroform. Recovery was very rapid, not being followed by any drowsiness or stupor. As a rule, there were no after-effects, patients feeling quite well three minutes after removal of the face-piece, and being able to walk out of the house. One case of vomiting occurred, and three or four of nausea; slight headache was sometimes present, which rapidly passed off. The average time required to produce anesthesia was 56 seconds, and the average anesthesia obtained was 76 seconds. The pre-anesthetic stage varied from 30 to 120 seconds, and the period of anesthesia from 25 to 210.

The advantages claimed for pental are: (1) Longer anesthesia than NO_2 yields; (2) simple apparatus; (3) no struggling or dislike to the drug; (4) small amount required—about two drachms; (5) rapid recovery; (6) no after-effects. The disadvantages are: (1) Insidiousness in action—too much may be given easily; (2) breathing noiseless and shallow; (3) screaming; (4) sudden stoppage of respiration; (5) sudden failure of heart's action.

Dr. Stallard then related a fatality which had occurred under pental in his practice, the case being his hundred and forty-eighth administration. A woman, aged twenty-three, attended to have several stumps (of teeth) removed. She was well developed and somewhat fat; heart sounds were quick, but no *bruit* was present, and no adventitious sounds were in the chest. She took the anesthetic well, but, being very nervous, commenced to breathe very quickly; being told to breathe more quietly, she did so, and became unconscious in 44 seconds. Four stumps were extracted, when the face became pale and respiration ceased, and the pulse that could be felt was very feeble. The patient was placed on the floor, and Sylvester's method of artificial respiration performed, but there was no attempt at voluntary respiration. The feet and legs were elevated and rubbed by the students present. An enema of brandy was injected slowly per rectum, but none of it was retained. Warm cloths were applied to the precordium, traction was rhythmically made on the tongue, and forty minims of ether were injected hypodermically over the precordium. The pupils five minutes after removal from the chair were moderately dilated, and the heart could be heard by the stethoscope feebly fluttering. At no time was there any cyanosis or duskiness of the features, but rather paleness; there was no sweating. On applying the battery over the phrenic nerve and diaphragm, three distinct contractions were noticed and then ceased; the pupils became widely dilated, and the tongue was cold to the touch. Artificial respiration was continued for an hour, but was of no avail. There was no attempt at voluntary respiration at any time beyond the three contractions of the diaphragm. No post-mortem examination was allowed.

After remarks from the President, Dr. Dudley Buxton, speaking of the mortality of pental, said the author gave one in 149 cases, but whether this was really due to pental was doubtful. Gurlt gave three deaths in 600 cases, and Snow two in 238 cases. One of the difficulties in working with amylene and pental was the frequency of impurities. Before pental could be accused of causing deaths, one must be sure it was pure. In all probability much of the pental at present supplied was impure. The German observer had found albuminuria and hemoglobinuria occurring in many cases within three or four days after the administration. Pental, so far as was known at present, was a most useful drug, but it probably possessed grave disadvantages from its liability to affect respiration, possibly through spasm of

the glottis or diaphragm. In the cases of death, it was noticed that these had arisen from failure of respiration, while the heart had continued beating for some minutes afterwards. A marked injustice might easily be done to any new anesthetic if, because cases of death occurred in the early days of its administration, its use was therefore discarded.

MR. JOSEPH WHITE said that forty years ago he used amylene extensively, principally during the extraction of teeth, and found it a charming anesthetic—quick in its action, no after-effects, and agreeable to the patients. When used for longer operations he soon found that alarming symptoms were very apt to arise, feeble respiration and circulation occurring very suddenly, so that he discarded the drug, not considering it so safe as chloroform.

Dr. SILK was struck by the similarity of Dr. Stallard's cases to those he had himself published as occurring when bromide of ethyl was administered; given the change of name in the two records of cases observed, it would be difficult to distinguish the one from the other. He had noticed with bromide of ethyl that decomposition always occurred sooner or later when the bottle had once been opened, and, as the clinical symptoms appeared so similar, he would ask Dr. Stallard whether he had found any evidence of decomposition occurring with pental. He was of opinion patients should not be in the dental chair, but recumbent, during the inhalation of pental, as vascular depression was so frequently noticed.

Dr. AUGUSTUS COOK had been administering pental during the last four or five years, all his cases being fairly long ones, some half an hour in extent, and his patients were invariably in the recumbent position. The main advantage of pental was the absence of after-effects. It might even be administered on a full stomach without fear of causing vomiting. The open method was employed in all his cases.

Dr. DUDLEY BUXTON asked if Dr. Stallard could not explain why in these recorded cases one would give an anesthesia of 90 seconds, another 25 seconds, and another as much as 210 seconds.

Dr. Stalliard, in reply, said he had frequently noticed that decomposition of the drug had occurred. With regard to albuminuria, he had examined twenty-cases after administration and found no albumin; but it must be remembered that all his cases were short ones, and its effect would not be long enough to injure the kidney. The fall of blood-pressure was very marked. With regard to the variable lengths of anesthesia obtained, he was of the opinion that there was a marked personal factor present in many cases.—*British Medical Journal*, March 21, 1896.

THE TREATMENT OF PULMONARY CONGESTION OR PULMONARY APOPLEXY.

This condition, which comes on in many cases of cardiac disease, and somtimes in persons who suffer from cardiac and renal difficulties, is best treated, according to the *Revue Internationale de Médecine et de Chirurgie* of March 26, 1896, by the following means: If the difficulty is with the heart, this organ should be properly stimulated by the administration of digitalis or caffeine, with the object of emptying the right ventricle and diminishing the cardiac engorgement. If the infectious diseases be present, tonics, alcohol, champagne and quinine should be given. Sometimes it is wise to use wet cups over the engorged area. For the shortness of breath dry cups may be used. Inhalations of oxygen and injections of ether may be given, or, in the place of ether, caffeine dissolved in camphorated oil. One to four hypodermic syringefuls may be given:

℞ Camphor, 1 drachm;
Sterilized olive oil, 1 ounce.

If the hemoptysis be marked, it may demand special treatment; and to prevent fainting, tight bandages should be placed around the limbs to confine the blood to the vital centres. Small pieces of ice may be taken into the mouth, and hypodermic injections of ergot may be employed, ergot also being given by the mouth. It is also stated that the following prescription may be of advantage under these circumstances:

℞ Dilute sulphuric acid, 1 drachm;
Simple syrup, 1 ounce;
Decoction of cinchona bark, 2 drachms;
Water, 7 ounces.
A tablespoonful to be given every half-hour.

In other cases the following prescription may be employed—the medicine to be placed in hot water, and the steam inhaled:

℞ Beechwood creosote, 3 drachms;
Balsam of Peru, 1 ounce;
Turpentine, 2 ounces;
Tincture eucalyptus, 4 drachms;
Tincture benzoin, 4 drachms;
Essence of turpentine, 2½ ounces.

INTERESTING CASES OF PERINEAL SECTION, WITH REMARKS.

The above is the title of an interesting and instructive paper by G. FRANK LYDSTON, in the *Journal of the American Medical Association* of March 14 and 21, 1896. Lydston, after detailing fifty-three of his cases, calls attention to the value of the preparation of the patient for operation. In his own practice the main features of the preparatory treatment consist in the administration of eucalyptus and careful regulation of the diet, with rest in bed, where these measures are practicable.

The proportion of cases in which he now meets with urinary fever after genito-urinary operations is so much less than he has heretofore experienced that he feels the credit is due to the oil of eucalyptus which he administers in ten-minim doses, in capsule, four times daily. Few patients are intolerant of it, and most of them who are sensitive to the drug can take it very comfortably by drinking freely of milk at the same time.

The writer does not believe that perineal section should be performed in every case of deep stricture. In many cases of apparently intractable deep stricture, operation may be avoided and the subsequent treatment carried out successfully by gradual dilatation, provided sufficient patience be exhibited in instrumentation. In some cases the preparatory treatment of regulated diet, eucalyptus, saline diuretics, hot sitz-baths, and leeches to the perineum and anus, may remove those conditions which, superadded to the actual organic contraction, offer insuperable obstacles to dilatation as long as they exist. There are certain cases, however, which experience has proven absolutely demand operation. These cases may be classified in general terms as:

1. Cases in which the patient comes from a distance and is unable to receive proper treatment by dilatation at the hands of the local physician or surgeon.

2. Cases in which the patient can only have dilatation practiced at irregular intervals on account of some peculiarity of his occupation.

3. Severe or moderately severe traumatic strictures.

4. Cases complicated by serious prostatic or bladder disease.

5. Cases in which obstinately recurring chill and fever are observed with or without (especially with) interference with the deep urethra by dilatation.

6. Cases complicated by renal disease.

7. Cases in which severe hemorrhage follows operative interference with the anterior urethra.

8. Cases of irritable and resilient stricture of large calibre at or about the bulbo-membranous junction, accompanied with symptoms of severe vesical irritation.

9. Cases of severe anterior stricture in which instruments can be introduced only with great difficulty, if at all.

Safety, convenience, thoroughness and greater immunity from recurrence are best obtained by the radical operation in such cases.

With regard to the danger of sepsis, it is now admitted by every practical surgeon of experience in genito-urinary surgery that the key-note of safety is a perineo vesical tube. A boutonnière is advisable where bladder or prostatic complications worthy of attention exist, as we thereby not only render the anterior urethral operation much safer, but also in many cases bring about a cure of the deeper-seated disease. It is to be remembered in this connection, however, that every case of anterior urethral disease in which vesical symptoms exist is attended by deep-seated prostatic or vesical infection. Early in the case, especially, the vesical and prostatic symptoms may be due to reflex irritation. This is especially apt to exist in anterior strictures of large calibre, even so far forward as the meatus.

That perineal section is safer than repeated operations by sounding in many cases of deep urethral stricture, is so well understood by practical genito-urinary surgeons that it is hardly worthy of comment. Many cases are observed at the hands of different operators in which chill and fever occur before perineal section, even without attempts at dilatation, and especially with it, in which urinary fever is entirely absent after proper subsequent drainage. In cases in which strictures of the scrotal region of the anterior urethra exist as a complication of deep stricture, perineal section enables us not only effectually to dispose of the posterior difficulty, but also to divide such bands as may be within reach of the finger anteriorly. The facility with which the finger may be introduced into the anterior portion of the urethra after a proper perineal section, and the stricture bands in this region located and divided with a probe-pointed bistoury, or even with scissors, is noteworthy, and will be surprising to any surgeon who has not hitherto attempted this method of operating. Digital exploration of strictures

of the anterior urethra through the perineal wound gives a much better understanding of the relation of strictures of large, or moderately large, calibre to urethral obstruction than can be acquired in any other manner.

Perineal section is certainly the ideal operation for resilient and elastic strictures of large calibre. Such strictures will apparently dilate under the use of a sound, but by means of a rubber exploring bulb may be proven to still exist even after apparently wide dilatation. Behind such strictures a septic process continually persists, drainage is always imperfect, spasm of the deep urethra will be found to exist, and there are usually pronounced symptoms of prostatic and vesical irritation.

The writer has devised a broad divulsor for overstretching the membranous urethra and rupturing or forcibly dilating the thin stricture bands, a procedure which cannot be accomplished by the ordinary sound. A hard-rubber drainage-tube, with a slight prostatic curve or a slight deep-urethral curve, is useful. This tube should be grooved in such a manner that it can be used as a shirted cannula, which will enable one to pack sufficient iodoform gauze about it to prevent the possibility of hemorrhage after the operation.

In cases of anterior urethrotomy in addition to the deep perineal operation, an additional drainage-tube of soft rubber is placed in the anterior urethra, allowing it to escape at the perineal wound. The deep drainage-tube may be removed in forty-eight hours, or may be left in as long as it is necessary to afford vesical drainage in cases in which the prostate and bladder require it. An excellent plan is to have this drainage-tube divided, and coupled together with glass tubing, a couple of inches of which are exposed at some accessible point. This enables the attendant to get a better idea of the amount of hemorrhage and to determine whether the tube is draining properly without removing the lower extremity of the rubber tube from the vessel of antiseptic solution.

In cases of severe anterior stricture in which operation is urgently necessary, if it is found impossible to dilate the canal sufficiently to introduce a urethrotome within the requisite length of time, it is at once obvious that perineal section gives much better control over the anterior stricture, and in case we desire to gain time the patient's retention is perfectly relieved. It will often be found practicable to introduce an instrument from the meatus, under the guidance of the index finger, into the perineal portion of the urethra after the canal is opened. In some instances, while an instrument cannot be passed from before backward, it is quite an easy matter to pass it from behind forward. In cases in which the filiform sound can be introduced, the string-saw method of Abbé can be adapted to the urethra with great facility and usually with surprisingly good results. This method is far superior to prolonged, often futile, attempts at instrumentation in the ordinary manner.

In cases of deep stricture complicated by perineal fistulæ, the indications for perineal section are usually peremptory. There are exceptional instances in which a small fistula in the perineum may be closed permanently under dilatation, or after division of strictures in the anterior portion of the canal; but in by far the larger proportion of cases a perineal operation is necessary. Care should be taken to dissect out, as far as possible, all fistulous tracts. Healing is usually very rapid; indeed, it is often surprisingly so, considering the extent of the incisions necessary to lay open or remove the fistulous tract.

It will sometimes occur that cicatricial bands of the urethra will escape division at the primary operation. It is therefore essential to examine the perineal wound carefully from time to time. Should such bands be found, they may be divided at any time prior to the closure of the perineal opening.

In cases in which sounding, after the operation, is performed with considerable difficulty, or in which the operation of sounding, at first easy, becomes difficult, the surgeon is justified in reopening the perineal wound and seeking for such obstructive bands as have escaped the first operation. If the operation be thoroughly performed in the first place, there should be little or no difficulty in the subsequent introduction of sounds.

The anterior urethra, if diseased, should be restored to its normal calibre. It is rather infrequent that the urethra will not admit a 35 French after thorough division of the perineal stricture. It is generally to be taken for granted that the exudate in strictures is entirely without the proper canal of the urethra.

It will sometimes be found, even in very tight perineal strictures, that the pathological changes constituting the stricture are limited almost entirely to the roof of the canal, the floor being partially normal. When, as occasionally happens, the urethra is practically

fused together at some point, there being at the same time a practically normal condition of the floor of the urethra, and marked thickening of the roof of the canal just in front of the point of fusion, care should be taken lest the urethra beyond the stricture be missed altogether.

A very important point in the after-treatment of perineal section is the frequency of dilatation. The majority of surgeons dilate too frequently. It is perfectly safe to allow the average case to go without instrumentation for at least a week after operation, and it is rarely necessary to pass instruments oftener than every three days.

In cases of fistulæ following perineal section, where a plastic operation is necessary, Zymanowski's method has proven most satisfactory in the writer's hands. In cases in which the perineal wound is slow in healing, the shotted or quilted suture is often effectual.

TREATMENT OF ACNE.

BARDACH (*Dermat. Ztschr.*, vol. ii, No. 2) concludes that the increase in the solids of the blood causes an irritation of the sebaceous glands. A quick cure is effected in these cases by increasing diuresis. For local treatment he suggests a soap containing about one and a half per cent. of iodate and bromate of sodium.

VENTRO-FIXATION OF THE UTERUS AND SUBSEQUENT PREGNANCY AND LABOR.

MILANDER (*Ztschr. für Geb. und Gyn.*, January, 1896) collects seventy-four cases of pregnancy after ventro-fixation of the uterus; ten of these were still pregnant when reported, and one woman had died before term; in the remaining sixty-three, gravidity ended in six cases in abortion, in three in premature confinement, and in fifty-four in labor at term. The position of the fetus was normal except in three cross-births, one footling, and one case where the ear presented. There was no particular trouble during pregnancy in most cases; in a few there were pains at the site of fixation, in some vomiting. Labor was generally normal, obstetric aid being given in eleven cases; inefficient labor pains were noted in two instances. The position of the uterus when afterwards examined is not given in some cases; in others it was one of anteversion as before conception—its fixation was not destroyed nor its mobility deteriorated, but in one of Olshausen's cases the attachment was lost, and retroflexion occurred in a case of Fraipont's and another of Howetz Meyer's. The obstetric interference consisted twice in Cæsarean section, twice in podalic version, once in extraction by the foot, and four times in the use of forceps. Milander draws attention to the large proportion of cases which required artificial aid, and attributes the cross-births to the uterus being compelled in these three cases to expand transversely instead of longitudinally.—*British Medical Journal*, Feb. 29, 1896.

THE TREATMENT OF SCIATICA BY COMPRESSION.

In an abstract of an article from the *Bulletin Médical* of January 22, 1896, which is published in the *Lyon Médical* of February 2, the writer states that M. NEGRO has reported 113 cases of rebellious sciatica in which this new treatment has resulted in recovery. The procedure is as follows: The patient lies on his face, with his legs extended and resting easily one against the other. The most painful spot is selected, the region where the nerve proceeds from the large sciatic opening. On its trunk both thumbs are applied and it is compressed with the greatest possible force; at the same time slight lateral movements are made without changing the point of pressure or moderating its intensity. This takes from fifteen to twenty seconds, and is followed by an interval of twenty minutes' rest, when the procedure is repeated. After a second application, which is much less painful than the first, the patient is able to walk, and for several hours, or even a day, he may be free from pain.

In order to obtain complete recovery, says the author, this procedure should be practiced about six times a day every two days, until the definite suppression of the neuralgia is obtained.—*New York Medical Journal*, March 7, 1896.

THE LINES OF ADVANCE IN ABDOMINAL SURGERY.

In a thoughtful paper on this subject, KNOWSLEY THORNTON (*British Medical Journal*, Feb, 29, 1896) takes up the organs individually, first discussing the liver. He advocates the somewhat surprising view that with an improved early diagnosis and prompt operation no case of abscess of the liver need in the future be fatal, or seriously dam-

age the health of the patient, advising, in common with all surgeons, to evacuate pus at one operation.

He points out that diagnosis of obstruction of the gall-bladder and ducts is often practically impossible, even after abdominal section has been made.

In discussing the surgery of the spleen he calls attention to the fact that bleeding in cases of splenectomy is often the cause of death, hemorrhage persisting from every cut surface. He states that he knows of no successful case of splenectomy with a history of health or any reasonably prolonged life after operation. His strictures upon splenectomy only apply to the operation when it is carried out for the relief of solid tumors or hypertrophy. The organ is, however, amenable to ordinary surgical treatment in hydatid or simple cyst. Wandering spleen should not be removed unless diseased.

The pancreas is interesting rather from a diagnostic than from a surgical point of view. It is chiefly of interest to the surgeon from the important part it plays, especially when attacked by malignant disease, in obstructing the common bile-duct.

In regard to wounds of the alimentary canal, he holds that it is never necessary to wait for symptoms, but after having made a reasonably sure diagnosis, operate at once or as soon as the first collapse has passed off. He urges that the external surface of the patient should be kept well wrapped up, and the work of search, repair and cleansing should be done as methodically and quickly as is consistent with thoroughness.

In considering obstructive diseases of the alimentary canal, the author states he is not sure that the operations performed in the pyloric region, especially for the relief of cancer, have added to our capability materially, either in the relief of suffering or in the prolongation of life, nor is it to the perfecting of such heroic procedures that he looks for future permanent advance in abdominal surgery. He holds that there is a more useful future for gastro-enterostomy than for pylorectomy.

In the case of young subjects suffering from acute obstruction, early exploration should be the rule. The critical maxim should be: Never give a purgative in such cases.

Of the methods for uniting the divided ends of the intestinal canal after resection of a portion of its whole circumference, he prefers Maunsell's suture.

In regard to the uterus, ovaries, and Fallopian tubes, he holds that the difficulties in these operations are the avoidance of immediate septic infection from the uterine cavity during the operation, the still greater danger of septic poisoning later from infection of portions of tissue whose vitality is undermined or destroyed in the course of the operation, and so to deal with the dense and highly vascular tissues as to avoid hemorrage, and equally to avoid strangulation and probable after-death of large portions of tissue.

He holds that there is not a great future for the surgical treatment of malignant disease of the uterus. Operations for removal of the ovaries and tubes are, he hopes, not quite so common as they were. We are beginning to learn that serious after-troubles may result from an immediately successful operation, and a great many cases of inflammatory trouble about the ovaries and tubes will subside with time, rest, and improvement of general health, in most cases more quickly without local treatment than with it. The organs behind the peritoneum are brought through the peritoneum, are more readily examined, and are more accessible to surgical treatment. The only operation upon the kidneys which may nearly always be done altogether outside the peritoneum is fixation.

THE ULTIMATE RESULTS OF VAGINAL HYSTERECTOMY FOR CANCER ORIGINATING IN THE CERVIX UTERI.

At the meeting of the New York Medical Association, February 17, 1896, Dr. Josehh E. Janvrin stated that during the last twelve years, among the various cases in which he had performed vaginal hysterectomy for cancer, there had been sixteen (or about one-fourth the whole number) in which the disease primarily involved the cervix. In five, the cervix alone was affected, in four the cervix and upper part of the vagina, and in seven the uterine body as well as the cervix. Of these sixteen cases, three died immediately after the operation, two showed a recurrence of the disease (one at the end of seven months and one at the end of eighteen), three were lost sight of within a year, and in four—in all of which careful examinations were made at least three and a half years after the operation—there was absolute exemption from recurrence. Of the remaining four cases, one had been operated on twenty-two months ago, with no sign of recurrence up to the

present time, two in September last, and one in October last.

The oldest of the patients was seventy-two years of age, and the youngest thirty-four. Fourteen were married, or had been, and nearly all had borne children. All of the three deaths from the operation occurred among his earliest cases, and were due, he believed, to faulty technique and prolonged manipulation. If these patients had been operated on later, when his experience was greater, he feels convinced that his total results would have been considerably better than they were. In all his cases the ureters escaped injury, but in two instances vesico-vag nal fistula resulted from the operation. In one or two cases he had found it advisable to perform preliminary curettage and to apply iodoform gauze for a time before operating.—*Boston Medical and Surgical Journal*, March 12, 1896.

A CASE OF CERVICAL RIB, WITH OPERATION.

WARREN (*Boston Medical and Surgical Journal*, March 12, 1896) reports an interesting case with the above title.

Cervical ribs are second in frequency of occurrence to lumbar ribs. They have been found at all ages down to a six-months embryo. They occur oftener double than single. In Pilling's cases, the proportion was 37 to 15. They are always connected with the seventh cervical vertebra. They have a costal cartilage only in those cases where they articulate with the first thoracic rib or with the sternum.

The connection with the first rib is usually with the bone itself, and may be bony or fibrous. It may be connected with the cartilage, and in this event the connection is fibrous.

In the first or rudimentary form the rib reaches no farther than the transverse process of the vertebra. In the second or more developed form the rib extends beyond this point. In the third form the rib extends far beyond this point, even forward as far as the cartilage of the first rib, and unites by a ligament or by its end with the first rib cartilage. In the complete form the cervical rib resembles a true rib and has a cartilage uniting it with that of the first rib.

With regard to the relation of the subclavian artery to the cervical rib, the artery always runs over it when the rib is of sufficient length, otherwise the artery runs in front of it and over the first rib. In the cases where the rib has caused symptoms due to pressure on the subclavian artery and brachial plexus, it has seemed to "grow forward" onto them and cause pressure symptoms.

In all the eight cases which Ehrich has found reported, there have never been present symptoms of pressure on the brachial plexus. In three cases pressure on the subclavian artery has given rise to aneurism, in the others to thrombosis somewhere in the course of the artery, and interference with nutrition has resulted.

The symptoms produced by cervical ribs may be classified as local and functional. The second group, functional symptoms, may be divided into two groups: symptoms due to pressure on the bracial plexus, and those due to pressure on the vessels.

The local symptoms are: A bulging, instead of the normal depression of the parts, just behind the posterior border of the sternomastoid muscle and above the clavicle; a visible and tangible superficial pulsation high up in the supra-clavicular region (this may be absent if thrombosis has taken place, or if, as often happens, the subclavian runs in front of and not over the rib); the presence of a smooth, immovable tumor, of bony hardness, in the supra-clavicular region.

The functional symptoms are: Disturbance of the circulation, such as aneurism, believed to be due to the sharp bending of the subclavian; thrombosis, attended with pallor and coldness of the arm; perhaps gangrene of the fingers and muscular atrophy which may be in part due to the compression of the plexus.

Symptoms due to pressure on the brachial plexus are motor and sensory disturbances, such as pareses, severe neuralgic pain and paresthesia, numbness, etc.

Other bony tumors in the same region—for example, exostoses from a first rib—may produce the same symptoms, though they are usually less marked.

The treatment is removal. This, provided the true nature of the bony growth be recognized, is not difficult.

IS SURGERY A CURE FOR CANCER.

DR. E. T. DAVIES (*Liverpool Medico-Chirurgical Journal*, January, 1896) quotes Dr. Byrne as follows, in his address before the American Gynecological Society:

"As the average period of life in cancer of the uterus, when not operated on, is not less

than two years, and often more, suffering has not been lessened but aggravated, and life has not been prolonged but shortened in the vast majority of all cases thus far subjected to vaginal hysterectomy. The field for vaginal hysterectomy in its application to uterine cancer, if indeed there can be one at all, is an extremely narrow one."

Davies states that hysterectomy is largely employed in London, but there are no available statistics; individual methods of performing partial or complete hysterectomy for cancer have been described, but the actual benefit obtained is only lightly illustrated by a few selected cases. Many distinguished physicians, he says, are advocates of surgery in uterine cancer, but their writings do not contain the facts which might support their advocacy. However, a few results of hysterectomy in malignant disease were reported last winter which may serve to replace the missing data. In seven cases the average duration of life after the operation was fourteen months, and in three of the author's cases the patients died within three months of the operation. In view of these facts, he says, the question arises: Is surgical interference a cure for cancer? The arguments advanced for the performance of hysterectomy are, he admits, of some force. The foul discharges and hemorrhages are for a variable period relieved, but there is a recurrence of the disease very soon.

With regard to cancer of the breast, an altogether different set of facts and arguments is met with. Sir Benjamin Brodie, says Dr. Davies, came to the conclusion, after having removed five or six hundred cancerous breasts, that he would never remove another without first laying before the patient the objection which his experience had shown him to exist to that operation—namely, that the practice tended rather to shorten life than otherwise. Sir James Paget, says the author, maintained that cancer was in the blood before it was in the breast; that we must look to constitutional and hereditary tendencies. He spoke with very great assurance of the specific nature of cancer as being almost certainly due to a specific morbid material, micro-parasite or ptomaine, or to one or more of their products, and as being closely allied to other micro-parasitic diseases, such as tetanus, tuberculosis, diphtheria, ague, actinomycosis, syphilis, and others; and he maintained, therefore, that the study of cancer and its treatment must needs be experimental, and once the morbid material was found it could be dealt with in the same way as other specific diseases.

Dr. Davies quotes from many other well known writers on the subject and describes a number of operations which, he says, were no doubt perfectly justifiable, but he thinks that their inclusion in cancer statistics introduces confusion. He very freely expresses his doubts of the value of surgery in cancer, and adds that they have only grown stronger as his opportunities for observation have increased. The habit of thought, he says, should be changed in the treatment of cancer. More work from the pathologist and from the bacteriologist should be looked for, and less from the surgeon.

THE DISADVANTAGES OF NON-ABSORBABLE SUTURES IN OPERATIONS FOR THE RADICAL CURE OF HERNIA.

COLEY (*New York Medical Journal*, Feb. 29, 1896) writes that his personal experience with non-absorbable sutures in hernia operations is confined to three cases in which silk was employed. In one of them, operated upon by Czerny's method, the wound healed by primary union, but soon after leaving the hospital a sinus formed in the cicatrix and refused to heal until the offending sutures had been extracted. The canal had been so weakened by the slow suppuration that relapse occurred three months after the operation, although a truss was worn the entire time. A second operation was then performed, this time by Bassini's method, with kangaroo tendon for the buried sutures, and the patient is now perfectly sound, three years after operation, without ever having worn a support.

In two cases operated upon by the Bassini method, silk was used. In both the wound failed to heal by primary union; in one the sutures all sloughed out, and relapse occurred shortly after leaving the hospital. In a third case moderate suppuration occurred, necessitating keeping the patient in bed after five weeks; the sutures did not come out, and the patient had no recurrence three years after operation.

In 250 cases of hernia operations in which he has used kangaroo tendon for buried sutures he has not had a single instance of sinus-formation, and the proportion of primary unions has been ninety-six per cent.

These cases require little comment further than the statement that they were oper-

ated upon by the leading surgeons of New York City, men whose reputation for careful aseptic work is a sufficient guarantee that the results were not due to faulty technique. The non-absorbable sutures, acting as foreign bodies, must alone be held responsible for these results. Schimmelbusch, in his recent book upon The Aseptic Treatment of Wounds, page 121, states: "It has more than once been observed that in primary closure of wounds by silk or silver wire, the ligature, at the beginning well imbedded in the tissues, after a long period of time becomes repelled and suppurates out. The primary union is satisfactory, but after weeks or months an abscess forms in the line of suture, whereupon a fistula develops, and from the latter the disturbing ligature escapes. Lister introduced six deep hemp sutures into the wound of an extirpated goitre, and after union observed the extrusion of all six in succession in the course of eight or nine months. The imbedded silk or silver wire simply remains as a foreign body in the tissues, of which the organism endeavors to free itself as soon as a favorable opportunity presents. The slowly healing sinus, with all the attending annoyance and discomfort, is the least of the evils. It will be noted that in nearly all the cases reported the constant suppuration so weakened the tissues that relapse soon followed.

Every abdominal surgeon of large experience knows that silk sutures, even when buried within the abdominal cavity, not infrequently find their way out in various ways. The presence of a suture in a hernia canal after firm union has taken place results rather in harm than benefit. Even the tendinous structures that go largely to make up the walls of the hernia canal require no more than eight to ten weeks for firm union. The ideal suture, then, would be one that would hold the parts in apposition for this length of time and then disappear by absorption. In kangaroo tendon we have these conditions perfectly fulfilled. There has never been observed at the Hospital for Ruptured and Crippled a single case of delayed healing of sinus when tendon or absorbable suture was used.

Unless those who use and advocate silk, silkworm-gut, or silver wire in hernia operations are able to present some advantages to offset the serious disadvantages that have been demonstrated, he believes these non-absorbable sutures should be entirely abandoned.

A METHOD FOR THE IMPLANTATION OF THE URETER INTO THE RECTUM.

KRYNOKI (*Centralbl. für Chir.*, No. 4, 1896) states that implantation of the ureter is of great importance in surgery, but that many surgeons, having been disappointed with the unfavorable clinical and negative experimental results, have very skeptical views as regards the value of this operation. The greatest danger in the implantation of the ureter into the rectum is dependent on the probability of infection of the kidneys from the contents of the bowel. This danger is really very important, and to avoid it the entrance of the feces into the implanted ureter must be made as difficult as possible. The best example as to how to do this is seen in the oblique way in which the ureter enters the bladder. Krynoki has imitated this method for experimental implantation of the ureter of the dog, with success. His method is as follows: Upon the anterior inner surface of the rectum, just below the sigmoid flexure, the serous and muscular coats are incised along the two sides of a triangle; the longer incision is parallel to the long axis of the rectum, and is 2.5 to 3 centimetres (1 to 1¼ inches) long; the shorter side is at right-angles to the long axis, and is one centimetre long (three-eighths of an inch). These two coats are stripped back, and in the underlying mucous membrane a small opening is made at the lower part. Into this opening the obliquely cut end of the ureter is introduced, and the mucosa of the ureter and rectum are united with four single sutures. The sero-muscular triangular flap is then returned to its original position, thus covering in a portion of the transplanted ureter. The longer side of the triangle is sewn up with a continuous suture, aud the shorter with interrupted sutures. To obtain still more safety, he sews the ureter by a few stitches to the bowel, along which it runs for some little distance.

Krynoki's paper is illustrated with figures, which render the procedure more easily understood.—*Quarterly Medical Journal*, vol. iv, part iii, 1896.

LAPAROTOMY FOR INTESTINAL PERFORATION OCCURRING IN THE COURSE OF TYPHOID FEVER.

HOTCHKISS (*New York Medical Journal*, Jan. 11, 1896) reports the case of a male patient, aged twenty-four, who on the fifteenth day of typhoid fever was seized with severe abdominal pain. The attending phy-

sician diagnosed "intestinal perforation," and transferred the case to the surgical side. At that time the patient's face was anxious and drawn, intellect clear, pain intense, with occasional vomiting. Upon laparotomy by median incision, a large amount of cloudy serous fluid, containing flakes of fibrin and fecal matter, gushed out. The peritoneum was everywhere deeply congested and covered with patches of fibrin; no adhesions. After free flushing a search was made for the perforation, which was found about five inches from the ileo-cecal valve, and was quite small, with ragged edges; the surrounding tissues were infiltrated and softened. The perforation and softened area were turned in longitudinally for an inch, and sutured by Lembert's method. The abdomen was again flushed, and the diseased portion of ileum surrounded and isolated by sterile gauze, which was brought out at the lower angle of the wound, thus acting as a drain. The patient recovered consciousness and expressed himself as feeling easier, but gradually sank, dying four and a half hours after the operation.

Out of the seventeen recorded cases of laparotomy for perforation in typhoid fever, only three have recovered, but, as these cases may be looked on as rescued from certain death, the author considers that the patient should be offered the slender chances of operation.

THIOSINAMINE.

TOUSEY (*New York Medical Journal*) presents a communication on this subject. He has been experimenting with thiosinamine and studying the literature in regard to it for over a year and a half. He believes it possesses positive curative properties in causing the resolution of benign and malignant tumors and the absorption of cicatricial tissue.

The writer publishes the first cases in which this treatment has been pursued in keloid and other neoplasms; and, though the number of cases has been small, the results have been positive. He believes that with increasing opportunity even greater action will be demonstrated than is now apparent. In addition to a number in which only one or two injections were made, his cases were three of keloid, three of recurrent and "inoperable" carcinoma, and two of lupus.

The first use of thiosinamine in medicine was reported by Von Hebra before the Second International Congress of Dermatologists, Vienna, 1892. He had experimented with it in the hope of finding in it a cure for lupus. He injected hypodermically a fifteen-per-cent. alcoholic solution into the muscular tissue between the shoulder-blades. A fine needle was used, and the injection was made slowly and deeply. The beginning dose was from half to three-quarters of a grain, and this was injected twice a week. In lupus cases the dose was increased in the third or fourth week to half or the whole of a hypodermic syringeful of a fifteen-per-cent. solution, equivalent to from a grain and a half to three grains of thiosinamine twice a week. These doses are as well borne as so much distilled water but they always produce a visible curative effect. In a few cases he went as high as one and a half or two syringefuls, with no bad effect. Keitel and Richter used a fifteen-per-cent alcoholic solution; and Van Hoorn, on the recommendation of Professor Duclaux, of Paris, has used a ten-per-cent. solution in equal parts of water and glycerin—this is just as active as the alcoholic solution, and not nearly as painful.

Hebra, as has been said, rarely reached three grains; the writer has never exceeded a grain and a half; but the other observers quoted used four grains and a half as a regular full dose, beginning, of course, with smaller ones. We should not try to give the largest doses that will be tolerated, but rather the smallest that will produce the therapeutic effect.

In Keitel's case and in Tousey's the injections were into the muscles of the arm and forearm; there were no ill effects. The others all made the injections into the muscles of the back.

If an alcoholic solution is used, there is sharp pain lasting for less than a minute. This may be somewhat diminished by pressure to diffuse the solution through the tissues.

It is desirable to discontinue treatment for ten days every six weeks or two months.

The physiological effect of thiosinamine in man is in a general way that of a very mild tonic. If the subject is perfectly sound, there are no symptoms at all produced by the injections; and if there is a lesion present, the reaction which may occur is local and is not accompanied by any general symptoms. Especially, there is never any febrile movement. There is in all cases a tonic effect with an increase in weight. Hebra states that absorption is very rapid, since his pa-

tients noticed a garlicky taste in the mouth within a few minutes. The same author has noted an extraordinary diuresis, the increase in the daily amount of urine being 200 to 500 cubic centimetres. In no case were there renal symptoms, or albumin or other pathological product in the urine. This diuresis ceases after a number of injections. He thinks it is a therapeutic action and ceases after abnormal fluids have been eliminated. Van Hoorn and Keitel, who both used large doses, noted after several weeks' treatment the onset of nausea, headache, and lassitude. The author has had no such experience, probably because he used smaller doses.

There has been only one accident reported from the subcutaneous use of thiosinamine. It consisted in the production of temporary cutaneous anesthesia, and was observed by Keitel.

As to the curative action upon lupus, Van Hoorn and Hebra observed a very great effect indeed wherever the superficial area of disease was great. Ulcerations healed, and the thickened and nodular edges flattened out. No case of complete cure is reported, and where the area involved was quite small —lupus of the cheek of the size of a dime— it was hardly influenced at all. Richter has seldom seen any effect at all upon lupus. In Tousey's cases no "reaction" has been noted, but he has uniformly seen a diminished vascularity and a softening of the edges with healing of the ulcer. The local treatment is a better means of handling lupus than the use of thiosinamine.

Its therapeutic application in clearing up corneal opacities has been attended with almost perfect success in the hands of all the investigators. Hebra had a patient who, before the injections, could hardly avoid collisions with people on the street, and afterward the acuteness of vision had so increased as to enable him to tell the direction of the wind by the weather vane on the high Rathhausthurm in Vienna. He and Richter report a number of such cases, and give the formulas for vision before and after treatment, demonstrating a remarkable increase. The cases for which it is unsuitable are those in which a vestige of inflammation is still present and might be started up into fresh phylctenulæ.

In the treatment of cicatricial contractures, thiosinamine acts by causing absorption of the fibrous tissue, whether located in the skin or in deeper parts—such as tendons and ligaments; and all the authors cited report complete cures of such cases. Among these are ectropion following lupus of the cheek, partial anchylosis of the knee from lupus, and talipes equinus following an injury (burn) of the leg. One case of ectropion was so marked that the eye could not possibly be closed; the tarsal cartilage was so rarefied by pressure and traction as to be scarcely perceptible, and even the corner of the mouth was drawn up toward the eyelid. This patient was restored to a normal condition, and the skin of the cheek became soft and freely movable on the subjacent tissues. In another case of Hebra's there was such contracture following lupus of the palm that the finger-nails grew into the flesh; complete extension was possible after about twenty-five injections, no other treatment having been employed. It was this wonderful absorptive power over cicatricial tissue which suggested to Tousey its use in keloid and malignant neoplasms.

In the treatment of simple ulcers and of stricture of the urethra, Richter's half-dozen cases, with an average of eight injections, gave negative results; but the writer does not regard this as final. In the case of stricture of the urethra or rectum, he believes thiosinamine might be a very valuable adjunct to local treatment.

Its action upon chronically enlarged glands has been observed by Hebra, and it is said to cause a very rapid absorption. In syphilitic cases, on the other hand, absorption was not effected; and he believes that this may in some cases be of diagnostic value. It has been used with success for uterine myomata. It has been used with negative results in eczema, psoriasis, and lupus erythematosus.

The writer then details the following case as an ideal non-operative treatment for these neoplasms:

The first patient was a mechanic, thirty-two years old. In September, 1893, his left arm was burned from shoulders to finger. An area about four inches and a half in diameter immediately above the elbow healed by granulation, the rest being more superficial. About four months after the accident the cicatrix began to itch and burn, and very soon a hard, prominent mass had formed in the scar. When he was admitted to St. Bartholomew's Clinic, July 7, 1894, he presented a typical keloid, consisting of two areas, each of the size of a silver dollar and projecting three-quarters of an inch above the surface. These were on the flexor aspect of the arm just above the bend of the elbow. The treatment consisted

in hypodermic injections into the left biceps twice a week. It should be mentioned that he applied for treatment because of impaired motion at the elbow. The beginning dose was two-thirds of a grain of thiosinamine, in ten-per-cent. solution in absolute alcohol, and the highest dose used was a grain and a half. These injections produced no special effect except on the neoplasm, which after one or two treatments became very much paler, and after twelve injections one portion had lost its thickening and induration—this part was then visible as apparently normal skin, but a little paler than the rest. The other area gradually changed to the appearance of normal skin. The cure was complete after twenty-seven injections had been made. Complete use of the arm was restored, and there was no thickening or adhesion of the skin, though the cicatrices were, of course, still recognizable.

To recapitulate: We have in thiosinamine a drug producing, when given hypodermically, no general symptoms, and even when long continued no harmful effects It acts specifically upon certain abnormal tissues to cause their absorption or conversion into normal tissues. It is of doubtful efficacy in lupus and a variety of skin diseases. But it is of the greatest possible value in the removal of cicatrical contractures following lupus or any other cause of loss of substance. The frightful contractures from burns of the neck would yield to its action, as cases of ectropion and corneal opacity do. The writer's own cases have shown its curative effect upon keloid and its palliative and probably curative effect on malignant tumors.

A DRESSING OF CHARCOAL MADE FROM RICE STRAW.

In the March number of the *Archives de cliniques de Bordeaux*, Dr. J. J. MATIGNON, of the Imperial Russian Legation at Pekin, states that M. Kikuzi conceived the idea of employing charcoal made from rice straw during the summer of 1891. It was employed with great success in the last campaign in the civil and military hospitals of Japan, in the latter of which its use is obligatory. It was also used during the earthquake at Mino-Oware.

This dressing is a dark-brown, almost black, powder, and its qualitative analysis gives potassium, sodium, aluminum, and calcium salts, iron, chlorine, sulphur, phosphorus, silicates, and organic substances. M. Kikuzi found that its absorptive power was considerable and that it was very elastic. Its application was easy, and a regular and equable compression can be made on all parts, especially if the precaution is taken to inclose it in small sachets.

In regard to its disinfection, says the author, the mode of preparation is in itself a perfect disinfecting process. In order to obtain good charcoal from the straw, it is prepared in the same way as for ordinary charcoal—that is, by slow combustion. When this is accomplished the charcoal must be spread out to cool, and separated as much as possible from the ashes. As charcoal readily absorbs and retains moisture, this dressing should be employed fresh.

With regard to the mode of applying it, says Dr. Matignon, sachets of fine linen which have been disinfected are filled with the powder and laid over the wound after washing and disinfection have been practiced. The shape, size, and thickness of these sachets should depend on the regions on which they are to be placed. It is advisable to fill the sachets at the time they are to be used, although they will keep for several weeks if enclosed in a metal box.

Dr. Matignon thinks that charcoal presents the following advantages over gauze: 1. Its absorbing power is greater. 2. It is found everywhere, and is rapidly obtained in large quantities. 3. Its disinfection is perfect, and it can be used immediately. 4. Its elasticity is equal to that of gauze. 5. It is very inexpensive, and common straw may be used if it is impossible to get rice straw.

This dressing, says the author, is particularly adaptable to army surgery, as its preparation is rapid and its aseptic qualities are perfect.—*New York Medical Journal*, May 2, 1896.

SURGICAL TREATMENT OF CARBUNCLE.

O'CONOR (*New York Medical Journal*, May 2, 1896) states that during the past three years it has fallen to his lot to treat twelve cases of carbuncle—six on the nape of the neck, two on the buttock, two on the back, one on the perineum, and one on the face; in each instance the treatment adopted was excision, supplemented in four cases by erasion.

The operation is carried out in the following manner:

1. The patient having been placed under ether anesthesia, a deep incision is made around the whole circumference of the car-

buncle, at least half an inch outside the infected area. Luckily, carbuncles, as a rule, do not occupy parts where there are any large blood-vessels; therefore there can be no excuse for stinting the depth of this incision.

2. With the handle of a scalpel or a periosteal elevator, the carbuncular mass is undermined, elevated, and removed, in the same manner as a tumor of the breast.

3. Sometimes it happens that the disease has extended too deep and cannot be isolated from the surrounding structures; in such a case, after all has been removed that can be with the knife, strong scissors are brought into action, and the business is finished with a sharp Volkmann's spoon. Not a trace of the disease should be left.

4. In order to contend with any microscopical particles that may have escaped this process of eradication, the whole surface is to be swabbed with a solution of zinc chloride, forty grains to the ounce. Of course, this is only used in cases that do not admit of a clean removal.

5. A large circular wound is generally left; this is painted with a solution of carbolic acid, alcohol, and methyl violet, one part of each, in water, ten parts. It is then dusted with iodoform, packed with iodoform gauze, and bandaged.

6. When the granulating wound comes level with a surrounding skin, Thiersch's grafts are applied, which considerably hasten the cure.

Needless to say, this operation is not by any means a bloodless one, but with a steady assistant armed with a dozen pressure forceps there is no need for alarm. Any vessels that merit it are tied; the general oozing soon ceases with the pressure of a sponge soaked in hot water.

Out of the twelve cases, in eight the carbuncle was cleanly excised; the remaining four required the scissors, spoon, etc. In not a single instance did the disease recur in the wound; constitutional symptoms, in some cases severe, vanished in twenty-four hours. In fact, it is hard to realize that a patient so deep in the throes of septicemia can be restored to his normal state in such a short space of time. No other method that the author has ever tried or heard of equals complete excision in this respect.

O'Conor then details a case in which he practiced this treatment successfully, and terminates the paper by saying that having obtained such remarkable results by excision, he is impelled to question the dictum of so good an anthority as Mr. Jonathan Hutchinson, Jr., in Treve's System of Surgery, page 713. This gentleman writing on the treatment of carbuncle, states: "An ancient plan of treatment of carbuncle has, however, been lately revived, consisting in cutting with scissors and scraping away all the slough in the belief that this shortens the healing process. Undoubtedly, some time and perhaps considerable pain are occasionally saved by this plan; but, on the other hand, the risk of opening up the veins and causing pyemia appears to be distinctly increased, and many surgeons have on this account abandoned it." O'Conor explains the occurrence of pyemia as due to half-hearted operations where the disease was not thoroughly cleaned away, or to operations undertaken too late, when the pyemic virus had already entered the blood. So far he has not heard of pyema following Barker's operation in psoas abscess, scraping away suppurating inguinal glands, or the opening up and scraping of large abscesses on the thigh, where the process is somewhat identical.

The grounds for his criticism are: First, that he does not think there is any scientific foundation for the remark just quoted as to the possible dangers; secondly, he is a strong believer in the doctrine that, in every instance in surgery where there is a grave constitutional depression, prompt measures ought to be taken, and, if possible a "clean sweep" made, not only of the micro-organisms, but of their camp. To dilly-dally, in the hope that painting with iodine may eventually conquer, is a species of surgery that must be attended with disaster.

SURGICAL TREATMENT OF DISEASE OF THE LIVER.

BOLOGNESI (*Bulletin Général de Thérapeutique*, March 30, 1896), in concluding a series of papers upon this topic, holds that the true surgical treatment of hydatid cysts of the liver consists in direct incision made by the anterior abdominal route, by the transpleural route, or by the lumbar incision. Median or lateral laparotomy should be reserved for antero-inferior or antero-superior cysts. By combining this operation with resection of one or more ribs, some diaphragmatic cysts may be reached if they are not too deeply situated. The transpleural route with resection of the ribs is the best way of reaching subdiaphragmatic cysts which are deeply

placed. If this route is employed, two or three inches of the median portion of the seventh, eighth or ninth rib may be resected. There is apparently little danger of pneumothorax, if the thoracic wall be firmly pressed upon while the pleura is being cut through. The diaphragm is then incised, and the borders of this incision are held out until the two pleural surfaces are sutured together. The operation is terminated by the evacuation of the cyst, which is treated by opening, washing, and draining.

Lumbar incision allows the surgeon to reach cysts in the posterior and lower part of the liver.

Incision and drainage is the only procedure possible for postero-superior or postero-inferior cysts treated by the transpleural or lumbar route. The antero-inferior cysts should also be subject to this treatment when they are adherent, friable, or when the thinness of the hepatic envelope prevents resection.

Incision combined with partial excision of the walls is only practicable in the treatment of cysts reached by laparotomy—that is, the antero-inferior and antero-superior cysts.

Complete enucleation of the cyst is very exceptionally practicable. When there is found a mass of small conglomerated cysts it is possible that resection of the portion of the liver thus degenerated may be indicated. This should be performed by means of an extra-peritoneal elastic ligature.

Movable liver is a rare affection. There is no indication for intervention when it can be held in place by an apparatus. But one lobe of the liver may be movable, or the entire organ may be easily displaced. If the gall-bladder is distended, cholecystotomy is indicated, this operation being sufficient to cause shrinking of the enlarged and floating lobule. Ablation of the lobule, unless it be very distinctly pedunculated, is not indicated. Partial hepatopexy has been twice practiced by Langenbuch, the right lobe being the movable portion of the liver. In the first case a horizontal incision was made through the abdominal wall parallel to the lower border of the liver near its proper position, then the lobe was secured in place by silk sutures traversing the thickest part of the liver and the muscular walls of the abdominal parietes. The colon was likewise fixed to the parietes. This patient was cured. In his second operation Langenbuch made a horizontal incision along the lower border of the ribs, and fixed the liver to the costal cartilages by eight silk sutures which traversed all the thickness of the gland and the corresponding cartilages. This patient, who had previously undergone a nephropexy for the right kidney, was completely cured.

The operation for fixing liver completely is conducted by making an incision parallel to the costal cartilages of the right side along the external outer border of the right rectus muscle; the liver having been placed in proper position, and held there by the hand of an assistant, four silk threads are passed through it two or three centimetres from its sharp anterior edge, their lower ends being brought through the lower border of the abdominal incision, and their upper ends carried through the costal cartilages and the overlying tissues; these threads are then knotted, and the belly is closed. The patient operated on by Marchant was made definitely well.

Gerard states that tumors of the liver should, from experimental grounds, be amenable to treatment.

Ponfick, Grim and Glück have shown that animals can survive after removal of over half the liver. Ablation of fibromata and lipomata is perfectly justifiable. Angeiomata, when encapsulated, may also be removed, but it should be borne in mind that these tumors are always small and do not give rise to the least functional trouble. Primitive sarcoma is very exceptional, and will probably escape diagnosis in its removable stage. Segond holds that surgery can do little for primitive cancer; Hochenegg, on the other hand, had one successful case living after eighteen months. The main operative difficulty in these cases is hemorrhage. This is best avoided by the use of elastic ligature and the extraperitoneal treatment of the pedicle.

SYPHILITIC INFECTION.

MRACEK (*Wiener Klin. Rundschau*, Jan. 12, 19, 26, 1896) has reinvestigated this subject, and relates two cases, in one of which the second attack developed ten years, and in the other four years, after the apparent cure of the first. He concludes that there are unmistakable cases of syphilis in which the disease is completely cured, and hence can be again acquired; it is, however, to be noted that the physician has no criterion which will permit him to say definitely when the patient is free from it. The author collects in tabular form all the cases of reinfection which he has been able to find in literature, in order to ascertain as exactly as possible the average

lapse of time between the attacks; the duration is, however, so favorable that no reliable deductions can be drawn. The author questions the currently accepted doctrine that a second attack of syphilis is milder than the first: one of his own cases, and many others in literature, directly contradict this view. He finds, however, that in cases of reinfection the cure of the first attack was always attributable to mercurial treatment, and deduces that no established case of syphilis should be dismissed without a thorough and satisfactory mercurial course.—*British Medical Journal*, April 18, 1896.

SUTURES OF ABDOMINAL WOUND IN OVARIOTOMY.

SOLOVIOFF (*Vratch*, No. 46, 1895) read a paper before the Moscow Surgical Society last October on the subject of unfavorable results following even the most careful application of sutures after ovariotomy and other abdominal sections. He had been accustomed to pass wire sutures through the entire thickness of the wound, and between them superficial silk sutures. In one case, however, a wire gave way, and when the dressings were changed a piece of omentum was found protruding through the wound. He now closes the peritoneum with silk, and then unites the superficial layers with the same material. Unfortunately, suppuration of the tract of the deeper sutures sometimes takes place.

Warnek thinks that germs may have entered the wound, or that the deep sutures had been drawn too tight. Boboff has seen suppuration even when the suture material had been most conscientiously sterilized. Pavloff most aptly refers to the case of the pedicle of an ovarian tumor, where the ligature is always pulled tight, yet suppuration is rare; the pedicle is carefully dropped down into the pelvis after ligature, where it remains safe from germs and from handling. The abdominal wound, however, is of necessity exposed all through the operation. Suppuration of suture-tracks, then, is more probably due to bruising and to microbes than to the tightness of sutures.—*British Medical Journal*, April 18, 1896.

A CASE OF AXIAL ROTATION OF THE TESTIS.

SHEEN (*London Lancet*, April 11, 1896) reports the case of a youth, eighteen years old, who jumped over a hedge after a tennis-ball on July 5, 1895, but felt no ill-effect at the time. On the 6th, at 3 A.M., he awoke with severe pain and swelling in the testicle, which was all right when he went to bed. The writer saw him on the 9th in consultation, when the testicle was found to be considerably enlarged and somewhat tender; the temperature was normal, although it had been up to 103°. Immediate incision into the tunica vaginalis was made on the 11th. On operation a dark-red mass like blood-clot was found, but was not removable, and the testicle was swollen to the size of a small orange, globular in shape. All antiseptic precautions were carried out. The case pursued an aseptic course, the temperature being normal throughout. The stitches, however, gave way and a hernia of the testis resulted; there was no pain. The dead tissue was dry and was cut away with scissors. There was no sensation, common or testicular. It was obvious that the testicle was useless, and it was removed on August 8; on the 20th the wound was dressed for the first time and the stitches were removed, the parts being nearly healed. The patient got up for a time day by day, was out for the first time on the 28th, and went home about the middle of September.

The specimen was sent up to the Clinical Research Association, who returned the following report: "The specimen is an example of that rare condition described as torsion of the testis. The substance of the body of the testicle is healthy in itself; there are no signs of chronic inflammation, syphilis, or tubercle. Section of the epididymis shows an abundant extravasation of blood into its tissue, but there is no other lesion. This hemorrhagic infiltration is due to twisting of the spermatic cord and vessels (the result of injury), and gives rise to acute swelling and pain, so that cases have been mistaken for herniæ."

There was no question of hernia in this case. The writer's diagnosis was hemorrhagic orchitis. Had the condition been recognized when first seen, the cord might perhaps have been untwisted, as was successfully done in a case recorded by Mr. G. Nash (*British Medical Journal*, April 9, 1893). A year or two ago, at a meeting of the Medical Society of London, Mr. Edmund Owen brought together references to fourteen cases which have been recognized during the past few years, and said that, as a rule, "it is only the unhappy possessor of an undescended testicle that gets into this very peculiar kind

of trouble. It is almost as if Nature herself, disappointed with her imperfect work, was anxious to cast it down a Tarpeian rock." Mr. Bryant, in reporting a case, surmises that certain cases of atrophied testicle have been examples of axial rotation, the nature of which has been originally overlooked. Twisting the cord in the lower animals is the French method of producing atrophy of the testes and sterility.

THIRTY-FIVE CONSECUTIVE CASES OF STRANGULATED HERNIA; ONE DEATH.

THOMAS (*London Lancet*, April 11, 1896) has operated upon twenty-five cases of strangulated hernia, with but one death as the result of the operation. Twelve of the cases were men, thirteen women. Six were over sixty years old, three over seventy years. The period of strangulation varied from ten hours to five days. In the worst cases, and in the old people, Czerny's radical cure, a simple ligature of the sac, was performed. Mac Ewen's method was used in the younger patients. Two cases had congenital inguinal sacs, and the portion cut off from each for a tunica vaginalis was closed with a continuous catgut suture.

Special attention was paid to disinfection of the contents of the sac as soon as the latter was opened and before any attempt at reduction was made. This was always accomplished by freely washing the fluid away with hot 1:40 carbolic lotion, until every shred of lymph and blood-stained material was thoroughly removed from amongst the coil or coils of intestine and the interstices of the omentum. Silkworm-gut sutures, double cyanide gauze, wood-wool tissue, and a suitable bandage or binder, were used. In only two cases were there complications. A fecal fistula formed once where the wound suppurated; this was due to contamination with ammoniacal urine from a hernia of the bladder which complicated the case. In only one case did the patient complain of pain, although no morphine was given after the first two cases. This pain yielded at once after the administration of a brisk saline purge. During the first twenty-four hours, sips of warm water were given.

Should flatus continue until the end of this period (twenty-four hours), starvation is persisted in until it passes off. If flatus is passed, half a pint of beef-tea is granted during the next twenty-four hours; then, if all goes well, half a pint of milk is added the next day, increased by half a pint daily until two pints of milk and half a pint of beef-tea are reached, generally by the sixth or seventh day. The patient is kept upon this until the bowels act. If by the ninth or tenth day no action of the bowels has taken place, a dose of compound liquorice powder is given. The diet is now increased by the addition of fish, then beef-tea, chicken, a chop, and common diet by the end of the second week.

Patients were kept in bed for six weeks to allow of a firm cicatrix forming. In some of the older patients, particularly when much collapsed, a teaspoonful of brandy in a little warm water was given every hour for the first day.

One patient died on the night of the operation, from collapse. This was a case of umbilical hernia, much exhausted by vomiting. The operation lasted only a few minutes, no attempt being made at radical cure, merely two sutures passed through the skin and sac to close the aperture. The second fatal case, aged seventy-six, died on the sixth day from coma gradually coming on from kidney disease.

OBSERVATIONS UPON ACQUIRED HYDRONEPHROSIS.

CABOT (*Boston Medical and Surgical Journal*, April 23, 1896) states that any obstruction in the urinary passages between the kidney and the outer air may cause an accumulation of urine in the renal pelvis and lead to a hydronephrosis. It is with the obstructions in the upper part of the ureter due to some acquired mechanical disarrangement of that tube that his paper has to do.

Whether these acquired, non-congenital cases of hydronephrosis are due in any part to congenital malformation or malposition of the ureter, is a matter which in most cases must remain in doubt; for when the cases come to autopsy the acquired changes, due to the pressure and displacement of parts by the great accumulation of fluid, mask and make doubtful the original condition.

Two forms of obstruction are found in these cases. These are: valvular folds at the entrance of the ureter; and contortions of this tube in the first part of its course which favor the kinking and closure of it when the heavy kidney presses down upon it.

As to the valvular folds at the ureteral orifice, their etiology is somewhat doubtful. Virchow regarded the condition as conse-

quent upon congenital oblique insertion of the ureter in the pelvis, while Simon thought this slanting insertion was an acquired condition due to the stretching of the pelvis and the pressure of it down towards the ureter. Küster believed that an inflammatory swelling of the pelvic mucosa was necessary to assist Simon's displacement in forming a valve; he thought the swollen mucous membrane was shifted somewhat on the submucosa and so partly pushed over the ureteral orifice. Hansemann explains the valve-formation by the pull of the kidney upon the comparatively immovable upper part of the ureter. It is plain that if this part of the ureter is fixed, as Englisch asserts, and the kidney then sags downward, the ureteral opening is carried downward and a valvular condition produced.

Hansemann's explanation seems applicable and satisfactory in many of the cases, and accounts for the not infrequent association of hydronephrosis with mobility of the kidney. It also helps us to understand those instances in which by change of position an escape of the retained fluid is brought about. As the valve is usually formed by the falling of the kidney downward, Hansemann recommends raising the hips of the patient in order to correct the condition. It is, however, to be remembered that the displacement of the ureteral orifice may be upwards or to either side if the pelvis dilates unequally in different parts, and in such a case some other than the inverted position may straighten the orifice. In one case, at autopsy, a hydronephrotic kidney had caused the orifice to be so displaced upward that it was only made patent when the pelvis contained considerable fluid and so dragged the kidney down by its weight. This condition was tested by the injection of varying quantities of water, and it was found that a certain amount of distention of the pelvis was necessary to alter the orifice so as to allow of the escape of fluid through it.

The effect of position in relieving such mechanical obstructions may also be helped by kneading and moving the tumor about, and in these ways relief may sometimes be obtained in those cases of intermittent hydronephrosis where the valve is not a very perfect one.

The hydronephrosis sometimes owes its origin to some temporary condition, as, for instance, to the stopping of the ureter by a blood-clot, by an inflammatory swelling, or by other pressure from without. If now this temporary cause be removed, the weight of the hydronephrotic sac may be sufficient to keep up the obstruction by maintaining the valvular condition by the downward pull of the kidney. Under these circumstances a very thorough aspiration, by relieving the weight, may suffice to correct the condition; and, indeed, a certain number of cures are obtained in this way.

Drainage of the sac through an incision in the loin is a more efficient means of treatment in such cases, for the constant escape of the fluid gives the sac an opportunity to shrink up and resume it more natural contour. Moreover, nephrotomy affords an opportunity for drawing the kidney up to the loin and fixing it there, thus preventing any further sagging down. In this way cures have been obtained, and Weir, Peters, Tuckwell and Cabot have been fortunate with this method more or less perfectly carried out.

The disadvantage of this method is that, in case the obstruction for any reason remains, the patient is annoyed by a persistent urinary fistula. With the fear of this result in view, it is natural that attempts should be made to surgically correct the valvular condition. Unsuccessful attempts to relieve the valve at the entrance to the ureter were made by Simon prior to 1876, by Trendelenburg in 1890, and by Küster in 1891. In Simon's and Trendelenburg's operations the ureter was slit up for a considerable distance as it lay alongside the pelvic wall, and then an attempt was made to unite the divided borders of the ureter to the lower part of the pelvis. Küster began his operation on the same plan, but, finding a stricture, ended by resecting the upper end of ureter. All of these cases resulted fatally.

In May, 1892, Fenger did a successful operation for valve-formation by cutting through the fold that made the valve, and so applying the sutures as to convert the longitudinal cut into a transverse wound. He left a bougie in the ureter for two days, and stitched up the kidney that was movable. Mynter has since done a similar operation, likewise with good result.

These cases are too few to enable us to reach any decision as to whether this is the best way to correct this condition. We must remember the etiology of the valve-formation, and must accept the fact that many cases have recovered after a simply nephrotomy with fixation of a movable kidney. We may feel, however, that if a distinct valve-formation is found, Fenger's method of divi-

sion may be practised without adding materially to the danger of the operation, for the chance of infiltration of urine must be slight when the tension is wholly removed by lumbar drainage. These operations are certainly attempts in the right direction, for they seek to re-establish the function of the kidney; while a nephrectomy, which is the last resort in these cases, in an unscientific proceeding when it removes an organ still doing good work.

We come now to consider the other form of obstruction due to the mobility of the kidney. A tortuous condition of the upper end of the ureter may be associated with a very movable kidney. This happens so often that it is probable that the twisted condition of the ureter is dependent on the mobility of the kidney. Sometimes, too, an obstruction in the lower part of the ureter leads to a dilatation of the upper part of that canal, which in this case becomes tortuous and may lead to an actual torsion. If, from twisting or kinking, a retention of urine is caused and leads to an accumulation in the pelvis, the heavy kidney pressing down towards the already twisted ureter aggravates the previously existing condition and produces a permanent stoppage. The point of obstruction in this case may be at some little distance from the pelvis. Under such circumstances a good result may perhaps be attained by frequent aspirations, which, emptying the kidney, allow of a shrinkage of the pelvis and in this way pull up the ureter into place. A nephrotomy, however, offers a much better chance of cure, for by drawing up and fixing the kidney in the loin it tends to straighten the ureter and so to restore its calibre.

If, however, the ureter is so slack and tortuous that its condition does not seem to be remedied in this way, it might even be worth while to resect the upper part of the ureter and, after straightening the tube, to insert its upper end into the pelvis in the manner practiced by Küster and recommended for correction of this condition by Tuffier. This is, however, an operation difficult of performance and not devoid of danger.

As a less dangerous proceeding, the writer would suggest that this tortuous condition can be corrected by inserting a bougie and leaving it *in situ* for several days. In this way the various curves of the canal are effaced while the pelvis is contracting and pulling it into shape. Furthermore, a moderate amount of inflammation is set up in the walls of the ureter which stiffens them, attaches them to the wall about, and thus tends to keep the form given to the tube. The writer has carried out this plan of operation in one case, and with so much success that he reports it as a suggestion for future trial.

The case was that of a woman thirty two years old. For three years she had noticed a tumor which was extremely movable. Abdominal section was performed, and, with the hand in the abdomen guiding, the aspiration needle was introduced through the loin, and the sac entirely emptied. At the end of two weeks the tumor began to re-form. The kidney was then opened in the loin, and the ureter could be seen emerging from a cyst by a funnel-shaped opening and running in a tortuous course down through the pelvis. An elastic bougie (No. 6 French) was introduced into the ureter and carried down in the neighborhood of the bladder. The sac was sewed at the edge of the wound through the muscle with continuous catgut. Drainage was introduced into the pelvis of the kidney, and the bougie was left *in situ*. The bougie was removed at the end of two and a half days, and the drainage tube after nineteen days. The sinus finally closed about a month later.

The author considers this case interesting because of the considerable degree of activity retained by the kidney so long affected by a very great dilatation, and also because of the success which attended the treatment of the ureter. The restoration of the permeability of the canal was due to the bougie assisted by fixation of the sac in the loin, and has persisted for seven months.

TEN CASES OF CANCER OF THE UTERUS OPERATED UPON BY A MORE RADICAL METHOD OF HYSTERECTOMY.

J. G. Clark, in an admirable report in the *Johns Hopkins Hospital Bulletin* for February and March, 1896, says with regard to mortality and regionary recurrence: In thirty-seven cases of cancer of the cervix the results were as follows: Ten per cent. died from the immediate effects of the operation, thirty-eight per cent. died with recurrence, five per cent. were not heard from, and forty-three per cent. were still alive after a period of one to five years.

In none of the fatal cases could a distinct history of metastasis to other organs be elicited, but all died from local recurrence.

This clinical observation is further substan-

tiated by the records of ten autopsies on inoperable cases, made in the Pathological Department of the Johns Hopkins Hospital, which show metastases in only one case beyond the pelvic and retro-peritoneal lymph-glands.

In four cases there were carcinomatous deposits in the pelvic and retro-peritoneal glands; and in five cases, notwithstanding the most extensive local involvement, there were no metastases.

The systematic steps laid down in Clark's first article remain practically unchanged, notwithstanding the introduction of certain modifications which have been found necessary for the most complete eradication of the disease in the course of the operations in the eight cases now reported.

The operation is not an easy one, and every detail should be worked out on the cadaver before it is attempted on the living subject.

It requires at least two hours and a half for completion, and on account of the close proximity to the great vessels in the pelvis, especially the external iliac veins and arteries which must be preserved from injury during the course of the excision of the broad ligament, is tedious and involves the most painstaking care if the best results are to be obtained. If the operation is carried out properly in all of its details, especially those relative to the dissection of the uterine arteries and ureters, the field of operation must be perfectly illuminated, either by the brightest sunlight or by a good electric light. The close anatomical relations of the bladder and rectum to the uterus necessarily preclude the possibility of any operation if the cancerous process has invaded either of these organs, but fortunately the tendency of this disease is to extend laterally into the broad ligaments before it invades the walls of either the bladder or rectum; and notwithstanding the rather extensive involvement of the broad ligaments, the operation promises good results if the cancer has not extended outside of its cervical limits anteriorly or posteriorly.

So far there have been no deaths from the immediate primary effect of the operation, and this result is attributable to the great care observed in immediately checking all bleeding, preventing shock by keeping the patient warm during the operation, and injecting normal salt solution beneath the breast and into the rectum at its close.

The summary of steps in the operation is as follows:

1. Insert bougies into the ureters under the local effects of cocaine, to save time and conserve the patient's vital powers for the operation.

2. Place patient in Trendelenburg's position, and make abdominal incision of sufficient length to insure free manual movements.

3. Ligate upper portion of broad ligament with ovarian artery; divide vesico-uterine peritoneum around to opposite side; push bladder off, and spread layers of ligament apart, exposing uterine artery.

4. Dissect uterine artery out for 2½ centimeters from uterus beyond its vaginal branch, and tie.

5. Dissect ureter free in the base of the broad ligament.

6. Ligate remainder of broad ligament close to the iliac vessels, and cut it away from its pelvic attachment.

7. Carry dissection well down below carcinomatous area, even though cervix alone seems to be involved.

8. Proceed on opposite side in the same manner as on the first side.

9. Perforate vagina with sharp-pointed scissors, making strong traction on uterus with small volsellum forceps so as to pull the vagina up and make its walls tense, then ligate in small segments of one centimetre, and cut each segment as it is tied.

10. Insert iodoformized gauze from above into raw space left by the hysterectomy; draw vesical and rectal peritoneum over this with a continuous fine silk suture.

11. Irrigate pelvic cavity, and close abdomen without drainage.

In the first case reported it was found impossible to insert the bougie into the ureters, and the operation had to be proceded with without this valuable aid Cases occasionally occur in which it is very difficult, or even impossible, to insert the bougies or catheters, and it is well to know in what way to proceed safely with the radical operation in the face of this obstacle. Under these circumstances the time consumed by the operation must of necessity be greater, as the most careful dissection is required to avoid ligating or cutting the ureters. If, however, steps 4 and 5, as given, are carefully followed, the ureters can be avoided safely and a thorough operation can be performed.

In cases in which the uterus has undergone senile changes, the uterine artery may be small and rather difficult to locate. To facilitate finding this vessel in such cases, a little manœuvre which was adopted in one case will be of great assistance. After ex-

posing the intra-ligamentary cellular tissue (step 3) the leash of vessels which radiates from the common trunk of the uterine artery and enters the loose cellular tissue lateral to the uterus is included in one ligature, when the artery back of this point at once becomes distended, turgid, and stands out quite prominently.

The dissection is then carried down along the course of the vessel, with the handle of the scalpel. In this way there is little danger of injuring the vessel, and by confining the dissection closely to the artery it is safely carried over the ureter, which appears as a glistening cord, to the internal iliac artery, where it is doubly ligated and cut.

By watching the ureter for a few seconds its identity is perfectly recognized by the characteristic rhythmical passage, from above downward, of peculiar serpentine waves, first noted by Dr. Kelly. The ureter is then bared through its course in the broad ligament; no fear need be entertained concerning the impairment of its nutrition by a close dissection, as it carries its own vessels. When the ureter is freed it can be lightly drawn out of the field of operation by a traction ligature while the operation is continued, or in some instances a more feasible plan is to push it out of harm's way against the pelvic wall.

The operations performed without the assistance of the bougies in the ureters can be made very thoroughly, but are infinitely more difficult, and are impossible in patients where the abdominal walls are thick and the pelvis deep.

There is the greatest comfort in having the danger of injuring the ureters completely eliminated from the operation by the presence of the bougies, which can be felt distinctly as solid bodies whenever it is necessary to determine the exact location of the ureter. The object of the careful dissection of the uterine artery (step 4) is two-fold—first, to permit a complete excision of the broad ligament; and second, to render the operation bloodless.

It has been found expedient to modify steps 6 and 7.

In order to expose most perfectly the lymphatic glands at the bifurcation of the external and internal iliac arteries, it is necessary to ligate and cut the broad ligament as close to the pelvic brim as possible.

In some cases, especially where the peritoneum clings closely to the pelvic walls, or is more or less fixed by an inflammatory process, it is found necessary. as one of the final steps in the operation, to split the peritoneum higher up, at the point where the ureter passes over the brim of the pelvis, in order to gain free access to the glands. This modification will be referred to further on.

After cutting the broad ligament away from the brim of the pelvis close to the iliac vessels, the excision should be carried down towards the pelvic floor, great care being observed to dissect out all of the intra-ligamentary glandular and cellular tissue with it. Especial attention should be paid to the glands at the bifurcation of the iliac vessels, which may not be visible but can be palpated. These glands should be enucleated with the fingers, and the greatest care must be observed in this part of the operation, as one of the glands is in the most dangerous proximity to the external iliac artery and vein. The usual plan is to leave these glands until the last part of the operation, when it will be found more convenient to remove them. When the excision of the broad ligament has been carried down to a point on the pelvic wall corresponding to a transverse line passing through the vesical orifices of the ureters, it is suspended, and the excision of the base of the ligament, which lies in such close relation with the bladder, ureters, and rectum, is completed later, from below upward.

After completing the operation on the opposite side in a similar manner (step 8), the vaginal puncture should be made.

Especial attention is called to the method of excising the portion of the vagina and base of the broad ligaments which are removed with the uterus.

It is exceedingly important to excise a large cuff of vagina; and to accomplish this with the greatest ease and thoroughness, an assistant should insert his finger into the vagina and definitely locate the margins of the cancer, and then, withdrawing the finger at least two centimeters below this point, make strong pressure upward against the anterior vaginal wall. With this assistance the operator is able to dissect down between the bladder and cervix and vagina, and perforate the vagina at the prominence made by the assistant's finger. Thus a wide area outside of the cancer can be excised.

The vagina is opened with pointed scissors, and the anterior wall is ligated in segments, and cut as far out as the ureters on either side. The ligatures must overlap so that a considerable area of tissue may thus be ren-

dered necrotic and thrown off. This makes the extent of the operation wider than that represented by the excised tissue.

From this point on, the operation must be continued with the greatest care. The thumb is inserted through the vaginal opening, if the left side is to be excised, and the index finger is carried behind the posterior layers of the broad ligament, acting as a guide to prevent inclusion of the ureter in the ligature, and also to indicate the farthest limit for the excision. By constantly pushing the ureter upward against the bladder with the thumb, one is able to continue the ligation and excision well out into the broad ligament beyond the vaginal wall and ureters, and thus make the most radical operation possible.

The opposite broad ligament is excised from below in the same way, when the uterus, broad ligaments and part of the vagina are removed *en masse*.

Before proceeding to step 10, the pelvic walls in the region of the bifurcation of the iliac vessels are inspected, and if any glands are palpable they should be removed. The following plan has been found of the greatest advantage in this part of the operation: The gland which is usually most prominent is about the size of a large pea or bean, and can be palpated distinctly in the crotch of the iliac vessels; this is worked out from its bed, and when traction is made upon it the lymph-vessel leading upward is made taut and acts as a guide to the next gland. By this procedure five glands have been removed in one chain. It is not possible to go over the pelvic brim, as the last accessible gland lies at this point, the next group of glands being situated higher up on the vena cava and renal vessels. In operable cases of cancer the metastases rarely go beyond these glands, and frequently, even in very advanced cases, they are not involved.

A further study of the pathology of this subject may show that the removal of these glands will be of value only from the same point of prognosis. If the glands are not readily exposed, a grooved director can be inserted beneath the peritoneum along the course of the ureter, when the peritoneum can be slit open as far as necessary to make the glands accessible and easily removed.

After enucleation of the glands and adjacent cellular tissue the operation is completed according to steps 10 and 11.

The analogy between cancer of the breast with its glandular involvement, and that of the uterus and its involvement of the broad ligament, is apparent to all, and the remarkably good results obtained by the radical operation on the breast and axilla have no doubt turned the attention of many operators to the possibility of a more radical operation for cancer of the uterus.

BARTHOLINITIS.

BERGH (*Monatshefte für Praktische Dermatologie*, bd. xxi, No. 7, 1895), in discussing inflammation of Bartholini's gland, shows that the inflammation is principally located in the duct of this gland. In addition to specific inflammation, there are other forms, namely, those due to streptococci and staphylococci. Usually the inflammation is gonorrheal in nature, and its complication is more common than blenorrhagic cervical catarrh. In very severe cases, mixed infection plays an important rôle, since pathological investigation has shown that the duct is essentially the part affected. True abscesses are rarely formed. More frequently pseudo-abscesses develop—that is, a collection of pus in the already formed cavity of the gland. The inguinal glands are not affected in pure bartholinitis, since the lymph-channels of these glands pass upwards to the uterus. It is only when there is coincidently with bartholinitis involvement of the skin and mucous membrane that the inguinal glands are inflamed.

As to the treatment, injections of a one-per-cent. silver-nitrate solution into the gland ducts after evacuation of the pus—in cases of abscess by puncture or incision, in case of chronic inflammation by extirpation of the glands with closure of the space left by buried sutures—offers the best prospect for cure.

PREVENTION OF GONORRHEA.

VON NEISSER (*Centralblatt für die Krankh. der Hard und Sexual Organe*, bd. vii, heft 1, 1896; quoted from *Berl. Klin. Woch.*, 36, 1895) has theoretically confirmed the method of preventing gonorrhea advocated by Blokusewski-Daum. This method consists in dropping into the meatus, the lips of which are held open, two drops of a ten-per-cent. solution of nitrate of silver. One drop is allowed to run over the frenum. Fifty patients adopted this treatment without experiencing the least irritation. Five seconds' application of this solution always inhibited the growth of the gonococcus when cultivated in artificial media. Weaker preparations are unreliable.

Reviews.

A TEXT-BOOK OF BACTERIOLOGY. By George M. Sternberg, M.D., LL.D. Illustrated by heliograph and chromo-lithographic plates and engravings.
New York: William Wood & Co., 1896.

We are told in the preface to this large and exhaustive work of nearly 700 pages that it is practically a condensed second edition of Dr. Sternberg's "Manual of Bacteriology," which was published in 1892 and which was received so favorably in this country and abroad because of its thoroughness and the high reputation of its accomplished author.

In preparing this so-called text-book of bacteriology, Dr. Sternberg has expunged the detailed descriptions of non-pathogenic bacteria and the extensive bibliography contained in his Manual, and has endeavored to make this volume more useful in many ways to students of medicine and to the busy practitioner.

The volume is divided into four parts: the first treats of Classification, Morphology, and General Bacteriological Technology; the second of General Biological Characters; the third of Pathogenic Bacteria; and the fourth of Saprophytes.

In Part I, as its title indicates, there are twelve chapters, the first of which is historical in character; the remainder are on Culture Media, Methods of Sterilization, Incubating Ovens, Experiments upon Animals, and Photographing Bacteria.

In the Second Part we have chapters upon Structure, Motions, Reproductions; Conditions of Growth; Modifications of Biological Characters; Products of Vital Activity; Ptomaines and Toxalbumens; Antiseptics and Disinfectants and their Actions; Influence of Physical Agents; the Action of Gases and the Haloid Elements upon Bacteria; Action of Acids and Alkalies and Various Salts of the Coal-tar Products and of Blood-serum and other Organic Liquids; and finally practical directions for disinfection.

Under Part Three are discussed the Modes of Action of Bacteria; the Channels of Infection; Susceptibility and Immunity to the Various Specific Micro-organisms of a Pathogenic Character.

In the Fourth Part appear chapters on Bacteria in the Air, Water, and Soil; Bacteria on the Surface of the Body and Exposed Mucous Membranes; Bacteria of the Stomach and Intestines; Bacteria of Cadavers and of Putrefying Material from Various Sources; and, finally, a chapter upon Bacteria in Articles of Food.

The volume is from beginning to end most copiously illustrated, and well printed. The text is unusually clear and easily read, and the plates are far better than are usually found in books of this character.

Altogether the book is one which adds still further to the already enviable reputation of its author, who brings not only executive but scientific ability to his office as Surgeon-General of the United States Army. Would that all public officers would and could serve the State and Science so well!

LECTURES IN PHARMACOLOGY FOR PRACTITIONERS AND STUDENTS. By C. Binz, Professor in the University of Bonn. Translated from the second German edition by Arthur C. Latham, M.A., M.B. (Oxon). Vol. I.
London: New Sydenham Society, 1895.

The first volume of Professor Binz's Lectures, published by the New Sydenham Society as an addition to their already most valuable series of translations, contains nearly 400 pages and deals with a large number of very important drugs, such as the anesthetics, morphine and the recent hypnotics, the bromides, coniine, curare, aconitine, the nitrites, iodine and its preparations, atropine, caffeine and digitalis, ergot and Calabar bean, strychnine, the ammonium salts, alcohol, and the ethereal or essential oils. The first chapter, or the introduction, is devoted to a consideration of the scope of pharmacology and a historical *résumé* of the subject. It seems to us that Binz scarcely does justice to Jackson and Morton when he states, in his chapter upon Anesthetics, that these gentlemen attempted to get a patent for the use of ether as an anesthetic, but that its odor revealed their secret and in this way they were prevented from obtaining the gain they sought. It is a pleasure to note that the lecturer has not overlooked the fact that as early as 1842 Long, of Athens, Ga., produced anesthesia by the inhalation of ether. Careful discussion of ether and chloroform from their chemical as well as their pharmacological points of view is then taken up, and although mention is not made of some of the more recent researches into chloroform, the chapter may be considered as being a fairly exhaustive and interesting one upon this subject, the author giving far more credit to American investigators than is common with many European writers. In our editorial columns reference is made to the fact, insisted upon by Professor Binz, that the potassium salts are more depressant

than the sodium salts; and from beginning to end of the volume we find, on looking up references in which we are interested, that its learned author has included pretty much all that is valuable in the theme which he has set himself to discuss.

We shall look forward to the publication of future volumes with interest, and can heartily recommend this one to American physicians and teachers as a scientific and useful addition to their stock of books of reference.

BORDERLAND STUDIES. By George M. Gould, A.M., M.D.
Philadelphia: P. Blakiston, Son & Co., 1896.

This volume of about 380 pages, which is, unfortunately, without an index, is a series of essays which the writer tells us are at present out of print, and which were taken from the editorial columns of the *Medical News* and the columns of the *Forum*, the *Monist*, the *Open Court*, and the *Transactions of the Council of the American Academy of Medicine*. Altogether twenty-four of these essays are contained in the volume. The first is upon Vivisection, and was delivered at the meeting of the Academy of Medicine in Atlanta in May, 1896. The title of this book is certainly appropriate, as we presume the author means to indicate that the essays are on the borderland of medical science.

Dr. Gould possesses a pen which seems never to be idle, and a writing centre which seems to be almost as active as the centre in the neighborhood of Broca's convolution. He brings to his writings not only the scholarly attainments which have, chiefly through his dictionary, reflected much credit upon American medicine, but also an enthusiasm which cannot fail to win for him much admiration even from those whom he has failed to convince of the correctness of all of his views in medical and other matters.

ARCHIVES OF CLINICAL SKIAGRAPHY. By Sidney Roland, B. A. (Camb.).
London: The Rebman Publishing Co., Limited, 1896.

As its title indicates, the object of this publication is to put on record in permanent form some of the most striking applications of the new photography to the needs of medicine and surgery; and Part I of Vol. I, after giving an explanation of the technique of the use of the Roentgen rays, the construction of the instrument, and similar facts, with an illustration of the instrument in working order, proceeds to the publication of the plates. The first of these is a large double-page plate of the body of a full-grown child, aged three months, in which the intestines, heart and liver cast definite shadows. The second detects a needle imbedded in the finger. Another shows multiple exostoses, and another the wrist and forearm from a case of syphilis, indicating the position of a gumma. The plates are rare reproductions, particularly the double one, the epiphyseal junctures of the bones being outlined with unusual plainness. A series of pictures such as are contained in this first number, and as we suppose will follow in subsequent numbers, will be of much use as forming a pictorial record of the advances made in this new branch of science.

Correspondence.

LONDON LETTER.

BY ST. CLAIR THOMSON, M.D. Lond., M.R.C.P. Lond., F.R.C.S. Eng.

Until quite a few years ago we had the four distinct classes of "physicians," "surgeons," "general practitioners," and "specialists," the latter forming a small group much looked down upon by the members of the first two classes, who lost no opportunity of offering every opposition to the development of any special line of practice. Yielding to the influence of the "physicians" and "surgeons," the large general hospitals abstained from inaugurating special departments for such subjects as the skin, the ear, the throat, the genito-urinary tract, etc., with the natural consequence that we were soon overdone with special hospitals, to which the practitioner resorted to perfect himself by post-graduate teaching in the special departments of study which were not exacted by the examiners (chosen from the physicians and surgeons!). Having obtained a reasonable amount of knowledge and skill in all the branches of practice, the general practitioner was not slow to find that he had no use for a consultation with any one, except with an expert in the matter in hand. Those who had most strongly opposed the movement soon found that the tide of specialism was too strong for them, and that if they were to float at all they must specialize themselves. In most instances this is exactly what they are now doing, taking charge of the special departments of the general hos-

pitals while waiting for seniority to float them into posts where they will "specialize" on some wider subject. All the time they continue to inveigh against "specialism;" and this attempt to hunt with the hounds and run with the hare ends with the usual results. Their special department is taught without interest, and therefore without satisfactory results to the students; and they win for themselves but a mediocre position. In private they will often confess that their public utterances against specialism are only of a Pharisaic character. One well known "physician" told me recently that, in spite of his written diatribes against it, if he had his time over again he would specialize, as he found that as a "physician" (like most of his group) he was being left stranded, and he regretted that he had not identified himself with either Gout or the Heart! This opposition by the bigwigs has had a result they little dreamt of: the general practitioner has become so thoroughly educated that he can do without them, and when he requires any help it is that of the specialist. Their own shortsighted, if not thoroughly selfish, policy has brought about a state of things that they could easily have avoided; we are now flooded with callow specialists, men who have had no experience of general practice, and who commence to specialize from the day they are graduated—if not before,—and with men who dabble in some department while waiting for a better post, and all the time the "physician" pure and simple is becoming extinct for want of work.

Death has removed two of our most distinguished men from this rapidly diminishing class. The obituary notices will have acquainted you with the death of Sir Russell Reynolds, who must have become personally known to many visitors last summer when he was President of the British Medical Association. It is needless therefore to recapitulate his career, but it may be well to recall the fact that certain elements of chance or good luck were not absent from it. When quite a young man he was offered on exceptionally good terms the remainder of the lease of the house in the West End inhabited by Dr. Marshall Hall—the discoverer of the reflex functions of the spinal cord, and also known to fame as the inventor of a method of resuscitation from drowning or asphyxia. Of course Dr. Russell Reynolds had the capacity of "grasping the skirts of happy chance," otherwise he would not have been successful in retaining so many of Marshall Hall's clients, and so establishing himself at a comparatively early life as a West End physician. To many it may seem strange that patients can thus be transferred from one physician to another, simply because they happen to successively inhabit the same house! There is no country in the world, so far as my experience of a good many goes, where this takes place to such an extent as in England; but then, as Carlyle remarked, there is no other land where the bell-wether instinct is so strongly marked. Russell Reynolds, although an "all-round physician," was himself to a great extent a specialist, and was the pioneer of the group which later on included Hughlings Jackson, Buzzard, Ferrier, Gowers, and Bastian.

So too with regard to Sir George Johnson, whom we have just lost: although he was one of the first in this country to use the laryngoscope, he was certainly regarded as an authority on diseases of the kidney. Curiously enough, he preferred to be appreciated for his work in reference to cholera, and when some one introduced him to a visitor from the States as "Kidney Johnson," he said, "If you must give me a nick-name, call me 'Cholera Johnson.'" He was a strong advocate of the evacuant treatment of cholera, and so active was he up to the age of seventy-eight that the week after his death the *Lancet* contained an article on this very subject, which he had revised the day before his fatal seizure. In it he says: "When in the epidemic of 1849 I saw that in case after case the arrest of an apparently mild attack of diarrhea by opium was directly followed by deadly collapse, I saw clearly enough that the repressive treatment and the theory which suggested it must be wrong, though I was at that time entirely ignorant of the true nature of choleraic collapse." He was equally opposed to the use of any astringents in the treatment of typhoid fever. His most original observations were doubtless those connected with the association of arterial tension and cardiac hypertrophy in granular disease of the kidney. He upheld his views with a warmth which may in some cases have appeared uncalled for by the comparative unimportance of the question in dispute; but I think no one could call his style pugnacious, while all who knew him are quite convinced that it was only his natural ardor and not any selfish object or personal bias which prompted him to deal what were taken for swashing blows. I had the privilege of being his pupil and his interne, and I know that he took a keen de-

light in controversy and enjoyed—if I may so term it—the sport of the thing. But there was none of the bitterness and jealousy which is only too often hidden behind the courteously worded criticisms of those who make a great parade of sparing the susceptibilities of their opponents. Indeed, a selfish nature would have been prompted to a very different line of action, as is shown by the following extract from one of Sir George's writings: "My friend Dr. Todd knew that I was preparing to publish particulars of the cases which I had treated by evacuants, together with my views as to the nature of choleraic collapse. He said to me, 'I believe that in the main you are right, but you will not convince the profession that you are, and in the attempt to do so you will suffer serious harm to your reputation and your prospects. I therefore advise you to publish no more on the subject.'" This well meant advice—and wise too, from a worldly point of view—was not acted on. His energy is shown by two facts: He was over sixty years of age when I acted as his interne, and during my period of office he became so convinced of the importance of the value of retinal symptoms in Bright's disease that he set himself to learn the use of the ophthalmoscope; and he mastered it, too, although he was even then suffering from the first symptoms of paralysis agitans. About the same time he had to deliver the annual Harveian Oration at the College of Physicians. In order to throw some new light on a well worn theme — the oration has to commemorate the life and work of Harvey—he undertook to show that the honor of the discovery of the circulation of the blood was due to Harvey and to him only. In order to refute the charge of plagiarism which had been brought against Harvey, this sexagenarian decided to learn Italian, and did so with such success that he was able to carry on a discussion with Professor Scalzi and vindicate Harvey's originality.

Let me remind our autumn visitors that the annual meeting of the British Medical Association will be held in Carlisle from the 28th to the 31st of July. A full programme is already published, and the beauty and romance of the Border counties will certainly give a special interest to all the excursions in the neighborhood. The meeting will be followed by the International Congress of Dermatology, which takes place in London from the 4th to the 8th of August under the presidency of Mr. Jonathan Hutchinson. I have good reasons to believe that it will prove a most successful and interesting meeting. The arrangements are well in advance, to avoid any of the inconveniences which have been only too prominent at some recent international affairs; members of the Congress will not be confined to the Congress hall from early morn to dewy eve; the exhibition of pathological specimens will be a prominent feature of the gathering, including all the most recent histological and bacteriological work on the skin; and the enormous field of clinical material in London will contribute a show of living specimens such as probably could not be brought together in any other city. The Secretary is Dr. J. J. Pringle, 23 Lower Seymour street, London, W.

I have been glancing through a new work on "The Treatment of Phthisis," by Dr. Ransome of Manchester, and see that it contains much that is of practical value to all who are called upon to treat this most distressing malady. Amongst other points I noted his remarks that "the digestive ferments in phthisis are often both wanting in quantity and deficient in activity, and there can be little doubt that in many of the cases of dyspepsia met with in this disease this is at least an important cause of trouble." It can only be met by artificially assisting digestion, by giving tonics, such as the vegetable bitters, calumba, cascarilla, gentian, quassia, etc., with nux vomica, and either acids or alkalies, for which he subjoins useful formulas:

℞ Acid. hydrochlor., dil., ♏ x;
Acid. hydrocyanic., dil., ♏ ij;
Tinct. aurantii, ʒ ss;
Succi taraxaci, ʒ j;
Spirit. chloroformi, ♏ v;
Inf. cascarillæ, ad ℥ j.
M. Fiat haustus. Sig.: Ter die sumend.

℞ Acid. hydrochlor., dil.,
Tinct. nucis vom., of each, ♏ x;
Spirit. chloroform., ♏ vij;
Tinct. gentian. co., ʒ ss;
Inf. gentian. co., ad ℥ j.
M. Fiat haustus. Sig.: Ter die sumend.

℞ Ammon. carb., gr. v;
Lac. bismuth., ʒ j;
Tinct. nucis vom., ♏ x;
Spirit. chloroform., ♏ v;
Inf. calumb., ad ℥ j.
M. Fiat haustus. Sig.: Ter die sumend.

In attacks of diarrhea and vomiting, which may arise in the course of phthisis, he has found one grain of calomel and one-half grain of opium to "act like a charm" in relieving both these symptoms. If they persist, a few doses of the following formula will often do good:

℞ Acid. sulph., dil.,
Nepenthe, of each, ♏ x;
Syrup. aurantii, ʒ j.
M. Ex aqua sumend.

He thinks it futile to attempt to disguise the flavor of creosote, and he prescribes it in the following emulsion:

℞ Creosoti, ♏ j–x;
Syrup. Tolu., ʒ j;
Mucilag. tragacanth., ʒ iss;
Aquæ vel aq. camph., ad ℥ ss.

In the night sweats of phthisis Dr. Ransome obtains the best results from doses of two to three grains of oxide of zinc, combined with Dover's powder, in the form of a pill, two or three times a day.

For hemoptysis he prescribes:

℞ Acid. sulph., dil., ʒ ij;
Ext. ergot., liq., ʒ iij;
Mag. sulph., ℥ j;
Syrup. zingib., ʒ iv;
Aq. menth. pip., ad ℥ vj.
M. Sig.: ℥ ss ex. aq. ʒ diis horis sum.

Some months ago *The Practitioner* published a formula of the "Chelsea Pensioner," and its composition is thus commented on in the *Chemist and Druggist:* "We find that there are about a dozen formulas in use for this celebrated electuary for rheumatism, and as we cannot of ourselves decide which of them is in general use at the present time, we should be glad of the assistance of our subscribers upon that point, and also in clearing up the origin of the preparation. As to the latter, Cooley states that a pensioner in the well known Chelsea home for old soldiers cured Lord Amherst of gout with it, and so it got its name. The earliest formula for it which we are able to trace is in Prof. W. T. Brande's 'Manual of Pharmacy' (1825), where the following passage occurs:

The celebrated remedy for rheumatism called *Chelsea Pensioner* is an electuary composed of a drachm of powdered rhubarb, an ounce of cream of tartar, two ounces of flowers of sulphur, one nutmeg in powder, and a sufficient proportion of clarified honey; two large teaspoonfuls to be taken night and morning.

"This is probably the original formula, but nowadays the nutmeg is sometimes omitted, and various modifications have crept in. To what extent the composition has been altered will be seen from the subjoined table.

"Mustard, nitre, carbonate of magnesia, ginger and treacle are not in the supposed original formula, but the whole of the authorities who adhere to that recipe as regards ingredients depart from it in the matter of quantities. The London Hospital formula is obviously out of court; it is not Chelsea Pensioner. Squire, the *C. & D.* and the Edinburgh Royal Infirmary are in substantial agreement. We do not suppose there is any one now alive who was in the trade when the electuary was introduced, but probably many who read this have old shop recipe-books containing recipes for the preparation, and we shall be glad if they will communicate copies to us, with any notes as to the source of the recipes. Perhaps we may be able to bring back the preparation to something like uniformity. It seems to be too archaic to officialize, yet it is too good to spoil by utter confusion."

	Squire and *C. & D.*	Cooley.	Remington.	Whitla.	Martindale and Lond. Hosp. Phar.	Edin. Inf. Phar.	Hager.	Private.
Pulv. gualaci	ʒvj.	℥ss.	ʒj.	℥j	℥ij.	ʒiv	℥ss.	℥ss.
Pulv. sinapis.....	℥iss.	..	..	℥ij.	..	℥j.	..	..
Sulphur. subl.....	℥iss.	℥viij.	℥ij	℥ij.	℥iij.	℥j.	℥vj.	℥iv.
Pulv. rhei.....	℥iij.	℥j.	℥ij.	℥ss.	..	℥ij.	℥j.	℥iv.
Pulv. potass. nit...	℥iij.	..	..	℥ss.	..	℥ij.	..	..
Pulv. potass. bitart.	..	℥ij.	℥j.	..	..	..	℥vj.	℥ij.
Pulv. myristicæ....	..	No. iv	℥j.	..		..	℥ss.	No. ij.
Magnes. carb.....	..	..	..	..	℥ij.	..	..	..
Pulv. zingib.....	..	..	..	..	℥j.	..	..	..
Mel..... ..	q. s.	℔iij.	℥x.	q.s.	..	q.s.	℥j.	℥xxiv.
(vel) Theriaca.....	q. s.	..	..	q.s	℥xij.	..	..	..

Sir Alfred Garrod, at a meeting of the Royal Medical and Chirurgical Society, stated that he thought he had been successful in establishing the following points in regard to the action of guaiacum: (1) Guaiacum is innocuous, and may be taken for an indefinite period of time, and looked upon as a condiment rather than as a drug, as harmless as ginger or any other condiment. (2) Guaiacum possesses a considerable power, but less than colchicum, in directly relieving patients suffering from gouty inflammation of any part; it may be given whenever there is but little fever. (3) Guaiacum, taken in the intervals of gouty attacks, has a considerable power of averting their occurrence; in fact, it is a very powerful prophylactic. (4) Guaiacum does not seem to lose its prophylactic power by long-continued use. (5) There are few persons who cannot readily continue the use of guaiacum; for such cases there are other drugs whose prophylactic action is in some respects similar; perhaps serpentary is one of the most powerful of these.

Dr. Murrell said he found tincture of guaiacum difficult to dispense, so he made a confection containing ten grains in a drachm of honey; or he gave the resin in half an ounce of malt extract, or of confection of

sulphur, which prevented the burning sensations sometimes experienced in the throat on taking this drug.

PARIS LETTER.

By Arthur R. Turner, M.D. (Paris).

The hospital instruction which the medical student receives in Paris may be described as follows: Unless he be an interne or externe of the hospitals, he is obliged to pass three years in following various hospital services. This hospital attendance begins with his second medical school year and ends with his fourth or last, not counting the first scientific year. During the first two years he follows general services of medicine and of surgery—that is to say, he cannot follow any of the special branches.

A certain number of physicians or surgeons of the Paris hospitals who have declared their willingness to receive such students at a remuneration, all told, of 3000 francs a year, have assigned to them individual groups of twenty, who are supposed to be all of the same year and standing. These students must present themselves in the morning at the hour of the physician's or surgeon's visit, follow him around the wards, and listen to his instruction. In some cases two or three beds are assigned to each of these students, under the supervision of the externes and internes, and the student is supposed to devote himself with special attention to the patients of such beds, dressing their wounds and taking observations, and to be able to answer any question concerning them which may be put by the visiting physician or surgeon.

Every three months the student is placed in a different service, and in no case is he allowed to choose the service to which he would belong, such classification being carried out by the officials of the Assistance Publique.

During the third year of hospital attendance the medical student must pass three months in a midwifery service. He must likewise pass another three months in a service of one of the following special branches: diseases of the skin and syphilis, mental diseases, children's diseases, diseases of the eye, or genito-urinary diseases.

In addition to the three years of medical attendance which have already been described, the student is obliged, later on, after passing the first part of his third examination, which includes obstetrics, to pass a month in one of the obstetrical clinics of the Faculty, of which there are two. During this month he must be present at the morning visit, and thrice a week remain on guard from 9 o'clock in the morning to 10 o'clock in the evening, in order to attend cases of childbirth.

The situation of the student who has become externe is somewhat different. He is now no longer under the rules which govern the ordinary medical student. He is appointed for three years, and changes his service but once a year. He decides his own service by seniority and by his rank in the competitive examination. Usually, however, if he be acquainted with any special physician or surgeon under whom he would desire to serve, he requests the latter to ask for him, and, though one of his colleagues would in reality have the right to insist on taking his place, it rarely happens so.

The externe usually arranges to have a certain period of his third year at his disposal, during which he may attend an obstetrical service, though he may, should he so desire, do this latter attendance at night, being on duty from 10 o'clock in the evening to 8 o'clock in the morning.

Only those students who have been internes in an obstetrical service are permitted to absent themselves from attendance at the obstetrical clinic after the third examination.

Dr. Boisson, a French surgeon in the army, stationed at Lyons, has had occasion to observe a number of patients returning from Tonquin and Madagascar. He believes he has discovered a new symptom which will render more easy the diagnosis of larval forms of malaria, and febrile affections of a non-malarial character occurring in individuals who have been exposed to malaria. This sign consists in a peculiar light slate-colored tint of the finger-nails, beginning previous to the chill, and attaining its maximum during the hot period of the attack.

Dr. Boisson looks upon this peculiar alteration of the finger-nail as due to the changes in a certain number of red blood-corpuscles which are destined to disappear after the attack. In one case it was noted in a patient while no attack of fever was present, and would seem to have been the symptom of an aborted attack. Once its absence in a case of severe fever in a malarial patient led Dr. Boisson to make the diagnosis of a non-malarial affection; this was confirmed by the development of an ordinary fibrinous pneumonia with all its objective symptoms.

The slate color of the finger-nails in malarial attacks is, according to Boisson, quite unlike the tint observed in the cyanosis of asphyxia.

One of the most prominent of French physicians, Prof. Germain Sée, recently died. He was born in 1818 at Ribeauville, Haute-Alsace, of Israelitish race, and was received Docteur-en-Médecine at Paris in 1846. Throughout his life, which has been very active, he devoted himself with special attention to the therapeutic side of medicine. The two drugs which in France will always remain associated with his name are antipyrin and sodium salicylate. One characteristic Professor Sée possessed, from his entry into medical life, and for which he was even attacked at one time, namely, his knowledge of and attention to foreign medical literature. Professor Sée was one of the physicians called in consultation on the Emperor Napoleon III. just previous to the Franco-German war, and he made the diagnosis of the calculus from which the Emperor was suffering, and for which he was operated upon later on in England.

The use of cocaine in hypodermic injections as a local anesthetic was discussed some time ago at the Academy of Medicine. Dr. Réclus, who has always been a strong partisan of this drug, and, one may even say, has, more than any one else, contributed to its general use in France, laid down the rules which he is wont to follow in its administration. It may be interesting to note that with it he has performed amputations of the breast, gastrostomies, and other operations of as serious a nature. Réclus declared that he never used a stronger solution than one per cent.; that the entire dose of cocaine injected was never more than fifteen or twenty centigrammes; and that the patient, reclining when the injection was made, was not allowed to rise for at least an hour after.

In the out-patient service at the Bichat Hospital, under the charge of Dr. Péraire, assistant of the celebrated surgeon Terrier, each cubic centimeter of the two-per-cent. cocaine injection used contains one drop of the official one-per-cent. solution of nitroglycerin.

Some time ago Dr. Thierry, chef de clinique of Dr. Tillaux, recommended the use of picric acid in burns; recently the use of potassium permanganate has been recommended. The part burned is to be dipped into the solution, and allowed to remain several minutes. Of course the usual dark hue is caused, but at the same time the burning sensation is done away with, and recovery is said to be rapid.

LOCAL USE OF DOBELL'S SOLUTION IN HERPES ZOSTER.

To the Editor of the THERAPEUTIC GAZETTE.

SIR:—In the treatment of herpes zoster the use of the various dusting powders, such as zinc oxide, boric acid, starch, and others, which are in such general use and highly spoken of by all authorities, give more or less relief; cotton-batting coverings and protectives such as collodion, gutta-percha, and the like, have also their able advocates; but when these fail, there is another resource. It is Dobell's Solution, having the following formula:

℞ Acid. carbolici, ʒ iss:
Sodii biboracis,
Sodii bicarb., of each, ʒ ij;
Glycerini, ℥ ij;
Aquæ, q. s. ad O ij. M.

A man twenty-eight years of age, of a decidedly nervous temperament, came to me with the eruption well out; he had none of the neuralgic pains, but complained of the most intense irritation, as tingling, burning, and itching—could scarcely keep from scratching or rubbing the parts continually. At first the dusting powders were used, but he got no relief—could not sleep, and almost every movement would set up a fresh spasm of tingling. I then gave him the Dobell's Solution, with directions to saturate absorbent cotton with it and bind on over the vesicles. This was done, and the patient afterwards stated that the relief was noted almost immediately, and was so marked that he was reluctant to remove his clothing, for fear of setting up the itching again. From the first application improvement continued until the vesicles dried up and all the symptoms abated.

I may also add that at the same time I administered zinc phosphide internally, which is spoken of by Rohé, also by Bulkley and A. Thompson, these last two claiming to have mitigated the course of the disease by the same if administered early. I am not prepared to say that it was so in this case.

It is true that this is only a single instance, but the relief was so marked when the patient was very nervous and the irritation so extreme, that I am confident others will find this solution of value in similar cases.

W. W. FULLERTON, M.D.

BOSTON, MASS.

—THE—

Therapeutic Gazette.

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Original Communications.

*ADDRESS IN SURGERY.**

BY J. J. BUCHANAN, M.D.,
Surgeon to Mercy Hospital, Pittsburg, Pa.

The purpose of the address on Surgery, as set forth in the resolution which made its delivery an annual custom, is to review the advances which have been made in surgical practice during the preceding year. Since the adoption of this resolution, the field of surgery has become so wide and the changes in practice so numerous that a satisfactory review of them would occupy much more time than is allotted to this address; and the bare enumeration of these changes would be a task neither interesting nor profitable. For this reason I feel that no apology is required if I ask your consideration of a few of the common things in surgery, most important because they *are* common.

In each of the subjects which I shall now bring before you, there have been changes in practice during the last few years which are of the utmost importance, and, if I seem to dwell on things already well known and accepted by you, it is from a deep conviction

* Delivered before the Medical Society of the State of Pennsylvania, May 20, 1896.

that, although you and I accept them, there are many others who do not; and to them a reminder of important advances may not be untimely.

The Treatment of Appendicitis.—By far the most important subject in general surgery to-day is the treatment of appendicitis—acute, chronic, and relapsing. The wide divergence of opinion as to the proper treatment of this disease increases greatly the responsibility of the attendant. Those surgeons are to be envied who have but one rule of action—to operate on every case, at any stage, as soon as the diagnosis is made. Unfortunately, to render this practice safe requires a degree of skill and experience not possessed by the majority of surgeons.

On the other hand, the expectant treatment of every case of appendicitis, even the mildest, is fraught with the greatest anxiety; for reliable prognostics of safety are absolutely lacking. I presume that no one to-day will claim that drugs have any place in the treatment proper of this disease. If the physician give opium he is merely covering the symptoms, and if he exhibit purgatives he may be doing worse, and certainly cannot by this means cure a condition which would not spontaneously recover. With rest, diet, nursing, and abstinence from meddlesome drugging, the majority of patients do recover; but who is there who can assure any patient of his safety? A sudden perforation of the appendix or the rupture of an abscess-wall may, in a few hours, convert an apparently favorable condition into one almost completely hopeless.

Giving due consideration to this element of uncertainty, to the excellent results which follow the early operation, and to the immunity from subsequent attacks which it confers, it certainly seems that the course of greatest safety consists in removing the appendix in the very incipiency of the disease. It is yet difficult to obtain the consent of patients to the early resort to operation, especially if the attack appear to be a mild one; but it is probable that when the insidious and deadly nature of some forms of this disease becomes better understood by the people, their reluctance to submit to early operation will be less pronounced.

However, there will still be cases in which an early diagnosis has not been made or the patient has declined operation early in the attack. In these cases, when the period for primary operation has slipped by, and an exudate has formed which may have an abscess of considerable size at its centre, the operation at once becomes a matter for more grave consideration.

Opinions differ as to the proper procedure at this stage of the disease. The gravity of the operation here depends on the position of the adhesions. If the appendix or abscess-cavity can be reached and dealt with without opening the general peritoneal cavity, the operation is safe and beneficial. If the abscess-cavity has to be reached and drained across this serous sac, the operation is most hazardous and, despite the greatest care, is often followed by a fatal issue. Many advocates of invariable operation have no hesitation in dealing with such abscesses across the free peritoneal cavity, protecting the latter with gauze packing. However skillful such operators are, and however good their results, the fact remains that surgeons ordinarily expert and resourceful find that such attempts are often followed by septic peritonitis and death. With the technique at present available, it is more prudent for most operators to attack these abscesses at a point where adhesions have probably taken place, and, therefore, without opening the general cavity of the peritoneum. If this space should be opened, opportunity is given of locating the line of adhesions, when the first incision can be closed and another made in a safer locality.

Whether the appendix should be invariably sought out and removed after evacuation of the appendiceal abscess, has furnished a theme for much discussion during the past year; but the conclusion of most operators is that if it is easily accessible it should be removed, but if it is imbedded in the abscess-wall and its removal would imperil the integrity of the latter and risk an opening of the healthy peritoneum, it should be left severely alone.

Operators generally agree that the acutely perforating or gangrenous appendicitis should be treated by the most prompt operation; and these cases, if skillfully operated, are by no means hopeless. The most positive advance during the year seems to be in the growing tendency to operate on cases of recurrent and chronic appendicitis between attacks, and it would not be strange if it should soon become the general practice to remove the appendix of every individual who has had an undoubted attack of appendicitis, especially if the indurated appendix can be felt.

In concluding this subject, I would insist

that there are two periods at which the appendix can be safely removed, namely, in the very beginning of the acute attack, and in the interval between attacks, and that all cases seen at either of these periods should be at once operated on if the diagnosis be clear and consent obtained.

The Treatment of Fractures.—I will now ask your attention to a few points in the treatment of fractures, a subject which has an active and personal interest for a larger proportion of general practitioners than has any other branch of purely surgical practice. From the earliest times the strongest interest has been displayed in the study of the repair of fractured bones, and the greatest ingenuity has been exerted in the invention of appliances which might conduce to this repair. The essential factor in repair is callus, and a leading indication for treatment is to secure a sufficient but not immoderate amount of this reparative material. The most favorable conditions for the formation of callus are an unimpeded blood-supply, approximation of the fragments as nearly as may be, and quietude of the parts without absolute immobility.

A revival of interest has occurred in the operative treatment of simple fractures by open incision and fixation. Since the dawn of the antiseptic era, there have been periodical attempts to bring this procedure into general use; but the good results usually attainable without operation have hitherto prevented it from becoming popular. Cases present themselves, however, at rare intervals, in which reduction cannot be satisfactorily accomplished by the most persistent manipulation from without. When the site of fracture is accessible, these cases are treated with the greatest success by the open method; for the apposition can be most perfectly made and fixation accomplished by suture or pegs. The result justifies the trifling risk incurred, and considerable deformity is thus prevented. Two errors are to be avoided in carrying out this treatment. The first error is in the tendency to apply this seductive method too widely and to operate on cases which could with equal or even greater advantage be treated without operation. The second error is in removing detached fragments of bone, which are valuable in hastening consolidation, and the loss of which frequently delays union. There is no doubt that the progress of repair in fractures thus treated is slightly more protracted than is that of simple fractures of the same kind, on account of the absolute immobility of the fragments, which delays the production of callus. Still, it is certain that the operative method is destined to have a wider application and, with proper limitations, will prove a valuable accessory in the treatment of many difficult cases.

The most recent changes advocated in the general method of treating fractures of the lower extremity have been in the direction of allowing greater freedom to the injured part. They are represented by the ambulatory treatment and that by massage and passive movements.

The so-called ambulatory treatment of fractures of the lower extremity, according to most of its exponents, consists in approximating the fragments and applying a fixation dressing by means of which extension can be kept up—the dressing being applied at such points of vantage as the tuberosity of the ischium for fractures above the knee, and the head of the tibia for fractures below the knee. An increase in the thickness of the sole on the sound side and a prolongation of the splint to a corresponding distance below the sole on the injured side, permit the patient to bear the weight of the body alternately on the two sides, the weight being transmitted, on the injured side, from the tuberosity of the ischium or the head of the tibia, as the case may be, through the splint to the ground. In this way the patient escapes confinement to bed and has the benefit of outdoor exercise. It is said that muscular atrophy is prevented and that the gentle stimulus of motion somewhat hastens union.

The treatment by massage at and near the seat of fracture, together with passive movements of the neighboring joints, is a method which entails great labor on the attendants, but has much to recommend its adoption.

The ideal treatment of ordinary simple fractures after reduction should meet the following indications:

1. The fragments should be retained in their normal relations as nearly as may be.

2. Splints or other dressings should be easily removable without appreciable disturbance of the seat of fracture.

3. There should be no constriction to interfere with the circulation of the part.

4. The dressings should be removed at short intervals to permit examination of the seat of fracture, massage of the callus and

neighboring muscles, gentle stimulation of the growth of callus by the slight disturbance incidental to the removal and reapplication of the dressings, and passive movements of the adjacent joints, when these can be made without disturbing the relation of the fragments.

The most important accessory in this treatment is a satisfactory removable splint—one which fits the part with such accuracy that its reapplication after removal is never a matter of experiment, and which is so light as to be no burden to the patient.

The form of splint which I have used for more than two years, to the exclusion of all others, is the removable splint of plaster-of-paris. It is easily and quickly applied. It fits the part with absolute accuracy. It causes no discomfort whatever to the patient. It can be removed and reapplied when necessary. The cost of the materials is trifling, and their compactness renders this the most portable of all splints.

In the application of this splint, an outline of the shape required is cut from a double layer of lintine, a firmly compressed cotton sheeting. One of these layers is placed upon a table, and two of the gypsum rollers are soaked in plain cold water till the air bubbles cease to rise. One of the plaster rollers is then spread on the layer of lintine as it lies on the table. The plaster roller is passed backward and forward from end to end of the lintine till the figure is entirely covered with from four to six thicknesses of the plaster bandage. This is laid as smoothly as possible, and can be made thicker at some parts than at others if desired. When the desired thickness is attained, the other piece of lintine is applied to the upper surface, to which it will adhere. The edges are then trimmed with scissors where the plaster overlaps, and the splint is ready for application. It is then about as flexible as a wet dish-rag. The limb is elevated, and the limp splint is applied directly to the surface and held there by an assistant. The application of a roller bandage adapts this moist and clinging splint exactly to every inequality of the part to which it is applied. The limb can now be placed on a pillow and steadied, while a splint of the same kind is prepared for the other aspect of the limb if necessary. By the time this is ready, the first splint will be found sufficiently hard to give a good deal of support to the part. The second splint is applied to the other aspect of the limb over the muslin roller, and the dressing is complete, and in ten minutes will be found perfectly hard. When it is desired to remove and reapply the splints, each should be applied in its own turn and with its own roller. In this way no part of the limb can be pinched between the edges of the splints, which occasionally happens when both splints are applied directly to the skin by a single roller.

Under no circumstances should any padding be placed next to the skin, unless it be the necessary dressing for a wound, as in a compound fracture. All such dressings should be as light as is consistent with safety, and should be duplicated as nearly as may be when the splint is removed for a renewal of the dressing.

If the splint should cause the least discomfort by pressure on any salient process, no padding should be used, but this part of the splint should be cut out or cut off, and the pressure will be at once removed.

Normal Saline Infusions.—In conclusion let me call your attention to the advantages of the infusion of large quantities of normal salt solution into the veins after hemorrhage from accident or operation. By large quantities I do not mean one or two pints, as is often used; but many quarts. A few weeks ago I reported the case of a man whom I attended about a year ago, with profound loss of blood from a limb crushed so as to require a thigh amputation, into whose veins, during the six hours before operation, I had infused six quarts of saline solution, with the gratifying result of reaction and recovery. Since that time I have used even larger quantities with marked benefit. Two weeks ago, my friend and colleague Dr. R. W. Stewart performed a thigh amputation on a patient whom he had restored from a pulseless state by the intra-venous infusion of six quarts of salt solution. Eight or nine hours later the patient again became pulseless, and was again revived by the infusion of four more quarts. This time the reaction was permanent and the patient is recovering.

I am convinced that the advantages of these enormous infusions into the circulation are not appreciated, and that the frequent failure of the salt solution is due to the fact that only one or two pints are used where many quarts should be administered, and that the treatment is abandoned after the effect of a single infusion has passed away, whereas one or more repetitions of the dose might have saved the patient's life.

*EXTERNAL HEMORRHOIDS, WITH SPECIAL REFERENCE TO THEIR TREATMENT.**

By Lewis H. Adler, Jr., M.D.,
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The classification of hemorrhoids into internal and external depends not only on the fact that one is formed within and the other without the cavity of the rectum, but also on the anatomical relations of the majority of such tumors to the internal and external hemorrhoidal veins respectively.†

External Hemorrhoids are divided into (*a*) the venous, (*b*) the cutaneous, and (*c*) the compound.

(*a*) The *venous* variety occurs in three forms: (1) as a marked varicose condition of the external hemorrhoidal plexus; (2) as a thrombosis of this plexus; and (3) as a clot of extravasated blood due to a rupture of a varicose vessel.‡

(*b*) The *cutaneous* pile consists essentially of a hypertrophy of the skin surrounding the anus. It frequently is the result of a venous pile, a fold of skin being left after the clot has been removed, either by absorption or operation. When uninflamed it occasions no great inconvenience, but when aggravated by improper diet, irregular habits, uncleanliness, etc., it invariably causes the patient, as stated by the Messrs. Allingham,‖ an amount of suffering quite disproportionate to the pathological appearance. Dr. Joseph M. Mathews § states that in his opinion the cutaneous pile is not an excrescence, as some authorities think, but an enlargement of the superfluous tags of skin sometimes found around the anus.

(*c*) The *compound external* pile, in which the hemorrhoid is *largely external* but is also *partly internal*, is so frequently found as to justify its separation into a distinct class. Dr. Chas. B. Ball* applies this name to a form of external pile which is found to consist principally of connective tissue, and which contains several thrombosed veins of considerable size, instead of one central cavity as in the common variety of venous hemorrhoid. I believe that the form which I have described, and not the one designated by Dr. Ball, should be understood when the term "compound external hemorrhoid" is employed.

Symptomatology.—Unless inflamed, external hemorrhoids (with the exception of the thrombotic variety) give rise to no pain and but slight inconvenience. Any annoyance occasioned is largely due to the mental effect of the knowledge that something abnormal exists about the rectum. In the acute stage a thrombotic pile is always attended by severe pain (due probably to distention) and by considerable constitutional disturbance.

All varieties of external piles, when inflamed, are accompanied by pain; spasmodic contraction of the levator ani and sphincter muscles; a disagreeable sensation as if there were a foreign body about the rectum, and this induces more or less tenesmus and straining, as well as a feeling that the bowels must be evacuated; finally, the general health is affected and reflex symptoms are often present.

The treatment of external hemorrhoids embraces more than mere attention to the local condition.

Permanent relief from the trouble, or the most satisfactory results, are obtained from a consideration of the causes inducing the malady; and the success attending any plan of treatment depends as much upon the correction or removal of these factors as it does upon the local treatment. This fact being borne in mind, we may profitably devote a few moments to the manner of treating those systemic or local conditions which frequently are the predisposing, if not the exciting, causes of hemorrhoids:

(*a*) Chronic Constipation. The first step to take in correcting this condition is to establish regularity in the time of going to the closet. Patients should be directed to go to the closet at the same hour daily, whether the desire exists or not. The morning hour will usually prove the best, either before or after breakfast.

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* Read at the meeting of the Medical Society of the State of Pennsylvania held at Harrisburg, May, 1896.

† A thorough and most instructive article bearing upon the subject of "external piles and their relation to the external hemorrhoidal veins," by Walter J. Otis, M.D., Surgeon to the Department for Diseases of the Rectum, Boston Dispensary, is to be found in a pamphlet reprinted from the February 1895 issue of the *American Journal of the Medical Sciences.*

‡ The existence of this form of hemorrhoid is denied by some authorities, but I have seen a sufficient number of such cases to warrant the classification given.

‖ Diseases of the Rectum, fifth edition, London, 1888, p. 83.

§ Diseases of the Rectum, Anus, and Sigmoid Flexure, New York, 1892, p. 96.

* The Rectum and Anus, their Diseases and Treatment, Philadelphia, 1887, p. 227.

Physical exercise is another important factor in correcting costiveness.

Certain articles of food often aid in the removal of this affection, such as the fruits—of which prunes, apples and oranges are the best.

Medically, the treatment of constipation covers a vast range of remedies. No one plan can be outlined that will benefit all, or even the majority of persons so afflicted. Some authorities are strongly opposed to the continued use of laxatives in these cases; and I do not endorse their employment except where other measures fail, and then only advise the use of the mildest remedy and in the smallest possible dose to effect the desired result. Dr. Chas. B. Kelsey* likens the habit of employing such drugs to the "habit of constantly whipping a horse—he soon expects to be whipped before he goes." Granting this to be so, I take it that some animals are of such a nature that the whip is essential; at all events, I am sure that the continued use of laxatives is necessary in some cases of obstinate constipation. I am aware that many persons abuse the use of cathartics and laxatives, but this fact offers no valid objection to their employment under the direction of the physician when other means have been fruitlessly tried.

Sometimes a tumblerful of hot or cold water taken before breakfast will nicely regulate the bowels. If this should fail, the mineral waters may be tried, of which the Hunyadi Janos is very excellent. A wineglassful of this, followed by a like amount of hot water, is the dose which I employ. Fluid extract of cascara sagrada (P., D. & Co.) with equal parts of glycerin, in doses of thirty to sixty drops at bedtime, will often prove useful.†

Among other prescriptions which I have found beneficial are the following:

℞ Extract of nux vomica, 6 grains;
Extract of belladonna,
Extract of physostigma, of each, 2 grains.

Mix. Make twenty-four pills. Dose, one pill before meals.

℞ Extract of cascara sagrada, 12 grains;
Extract of nux vomica, 3 grains;
Extract of belladonna,
Resin of podophyllum, of each, 2 grains.

Mix. Make twelve pills. Dose, one to two pills at bedtime.

℞ Powdered rhubarb,
Powdered purified aloes, of each, 15 grains;
Powdered ipecacuanha, 4 grains;
Powdered nux vomica, 6 grains.

Mix. Make twelve pills. Dose, one to two pills at bedtime.

(*b*) Functional Derangement of the Liver. If dependent upon a gouty or lithic-acid diathesis, the treatment must be directed towards relieving these conditions. In all cases the diet should be carefully regulated. Meat should be taken in small quantities. Rich gravies, sauces and pastry are to be avoided, as well as all sweets. The use of alcohol should be restricted. All wines except claret are particularly objectionable. Considerable benefit is to be derived from the use of aperient medicines, of which the salines are the best, as the sodium phosphate or the sulphate, or the natural mineral waters. In some cases I have seen marked improvement result from the use of mercury in some form, such as fractional doses of calomel, or blue mass in five- and ten-grain doses. Ammonium chloride in ten- to fifteen-grain doses four times daily is a useful remedy in hepatic congestion. Nitro-hydrochloric acid in combination with nux vomica and compound tincture of gentian often proves of value.

℞ Strong nitro-hydrochloric acid, ½ fluidrachm;
Tincture of nux vomica, ½ fluidounce;
Compound tincture of gentian, ½ fluidounce.

Mix. Dose, 25 drops in a wineglassful of water, after meals.

Turkish baths are beneficial when taken once or twice a week. Massage is of decided advantage. Lithium salts are indicated, either in the form of the effervescing citrate or the waters of some of the many mineral springs. In some cases the wine of colchicum is an efficient remedy, in doses of five to twenty minims.

(*c*) Obstructive Disorders of the Heart and Diseases of the Lungs, accompanied by destruction of the capillary vessels, are rather subordinate factors in the causation of piles, but nevertheless demand consideration and treatment when associated with the malady under discussion.

(*d*) Other Diseases: Polypi; irritable ulcer of the rectum, more commonly called fissure; rectal stricture; phimosis; adherent prepuce; stone in the bladder; enlarged prostate; urethral stricture; malpositions of the uterus, and growths or other diseases of that organ, as well as of its appendages, must receive attention before we can hope to deal satisfactorily with the hemorrhoids.

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* Diseases of the Rectum, fourth edition, 1893, p. 444.

† The combination of glycerin with the cascara was suggested to me by Dr. Henry Lovett, of Langhorne, Pa. Since employing the prescription, both personally and otherwise, I am led to believe that its use for a time will lead to the permanent relief of cases suffering from chronic constipation.

Errors in diet and mode of living should likewise receive proper attention.

The local treatment of external hemorrhoids may be divided into the operative and the non-operative. The first is the preferable plan in nearly all instances. If, however, the patient refuses to submit to the slight operation necessary, recourse must be had to local applications during the acute inflammatory stage.

The operative plan, by which method only may we expect a radical cure, may be accomplished by (*a*) simple incision, by (*b*) excision, or by (*c*) excision and primary suture of the cutaneous edges of the resulting wound.

(*a*) Simple incision is applicable only to the venous form, excluding the simple varicose variety, which latter, unless inflamed, hardly ever requires operative interference.*

The operation of incision consists in shaving the hair; cleansing the parts thoroughly and rendering them as aseptic as possible; then anesthetizing the tumor, by means of a hypodermic injection of a four-per-cent. solution of the hydrochlorate of cocaine,† or by a spray of ethyl chloride, or by freezing the pile with salt and ice; and then catching the tumor firmly between the thumb and finger of the left hand, and transfixing its base in the direction of the radiating folds of the anus with a curved bistoury, and cutting out; at the same time, by gentle pressure the clot or clots may be extruded. The subsequent treatment consists in dusting iodoform, or aristol and boric acid equal parts, or iodol, freely over the raw surface, being careful to see that the same is finely powdered and not lumpy; then apply a piece of lint, soaked in a five-per-cent. carbolized oil, to the bottom of the wound, to prevent the sac refilling with blood and to enable healing to occur from below instead of running the risk of a superficial fistula forming by the edges of the wound only uniting.

The patient should be advised to keep quiet for a few days, or at least not to take any active exercise. It takes about ten days for the healing process to be completed, and usually the relief from pain is immediate and complete.

(*b*) Excision is the form of treatment most generally employed for the cure of all the various forms of external hemorrhoids. The technique is similar to that described for incision, with the exception that the pile is grasped by some suitable instrument, such as a hemostat, and the tumor is removed in its entirety by means of a pair of scissors, curved on the flat. In some instances a small artery may require a ligature. If the operation be properly performed, there will be none of the dangers (so frequently mentioned in text-books) of the formation of a stricture. Iodoform or some one of the combinations of stearate of zinc is freely dusted over the raw surface, and a firm pad of gauze and cotton and a T-bandage complete the dressing.

(*c*) Excision combined with primary suture of the resulting wound. The essential difference between this method and the one just described consists in the close apposition of the wound by carefully buried silkworm-gut sutures. The following points might, however, bear emphasis: The tumor is anesthetized, and then grasped on either side of its long axis by the hemostat; the necessary number of sutures are now inserted, care being taken to place them beneath the base of the pile, so that when the latter is excised the stitches will not show in the wound but be buried.

This plan of dealing with external hemorrhoids has proven most satisfactory, not alone to me but likewise to the patient. They get well much quicker and suffer less annoyance than when the parts are left to granulate. The sutures are removed on the third or fourth day. In any stout person I am in the habit of taking out the sutures within forty-eight hours, for fear of the tension producing a fistulous track. I have operated on twenty-two persons by this procedure, and have had primary union in all but two instances. Operating in this manner also prevents hemorrhage.

Non-operative or palliative treatment consists primarily in keeping the parts thoroughly cleansed by bathing with warm water and Castile soap.

A most valuable and soothing lotion for use during the acute inflammatory stage is one advised by the Messrs. Allingham.*

℞ Strong subacetate-of-lead solution, 1 fluidounce;
Tincture of opium, ½ fluidounce.

Mix. One teaspoonful of the lotion to be mixed with one wineglassful of milk, and to be applied frequently to the anus.

A formula which I have found very useful is as follows:

* It is seldom, however, that the surgeon is consulted about external piles unless they are inflamed or associated with internal hemorrhoids.

† Ten minims usually suffices.

* *Op. cit.*, p. 84.

℞ Fluid extract hamamelis, 1 fluidounce;
Fluid extract hydrastis,
Compound tincture benzoin, of each, 4 drachms;
Tincture belladonna, 1 drachm;
Carbolized olive oil (5-per-cent.), sufficient to make 3 fluidounces.
Mix. S.: Apply often to the parts.

Heat or cold applications are often of service.

Dr. Ball* considers the local application of a mixture of extract of belladonna and glycerin smeared over the anus, and followed by a warm stupe, the best palliative treatment for external hemorrhoids. In addition the bowels should be freely moved, and a light, easily digested diet, with rest in bed, prescribed.

Any of these remedies will, as a rule, cause the inflammation to subside within a few days; but usually a thickened tag of skin is left which is liable at any time, on the slightest provocation, to become inflamed.

1610 ARCH STREET.

PRIMARY CARCINOMA OF THE CORPUS UTERI.†

BY H. D. BEYEA, M.D.,
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In the routine work of every practitioner of gynecology I believe there is no disease which is of such grave importance as carcinoma of the uterus. The great majority of cases are either unrecognized or appear too late for the surgeon to offer any promise of cure, and often even too late for any palliative treatment. Of those cases which do come under observation, there is, in my opinion, a general tendency among the medical profession to treat them symptomatically, regarding them as menorrhagia, without even making a vaginal examination, until the menorrhagia becomes a constant hemorrhage. Pain appears as a prominent symptom, ulceration takes place, and the bad-smelling discharge appears: the disease has then infiltrated beyond the uterus. From the statistics of Winter‡ it is shown that in only twenty-five per cent. of the patients with this disease can the operation of hysterectomy offer any promise of cure. Every practitioner is sure to see these cases; and if he is not thoroughly familiar with, and ever on the outlook for the earliest symptoms, impressing the patient with the importance of a vaginal examination and availing himself of every method of making a diagnosis, I am sure he will many times, even within a few months, see his patients go beyond the help of any form of treatment.

Now, knowing, even in this age of modern medical science, that the majority of cases of carcinoma of the uterus either appear too late or are not diagnosed sufficiently early for the operation of hysterectomy, and that this operation, particularly where the disease is localized to the body of the uterus, offers comparatively good results, I think it should be the effort of every practitioner of medicine to earnestly urge his patients to subject themselves to every method of early diagnosis, and when the diagnosis is made to at once advise the only method of cure—namely, total hysterectomy.

The history of primary carcinoma of the corpus uteri is almost entirely confined to the last fifteen years, or since the introduction of total hysterectomy, the operation of Freund* which gave the opportunity of studying the disease in its earlier stages, and to the very extensive work of C. Ruge and J. Veit in 1881,† detailing a complete anatomical and clinical study of twenty-one cases and the report of twenty-two other authentic cases from the literature. The early writers only recognized carcinoma of the uterine body when the disease was far advanced—when the body, cervix, ovaries, vagina and bladder were involved, the most extensive disease being in the uterine body. The first reference to be found in the literature was in a monograph on Carcinoma of the Uterine Body, by Wagner, in 1858. The text-books of 1860 to 1875 scarcely suggest it as being possible, and those of Veit (1868), Scazani and Beigel (1875) mention it with a statement of doubt regarding its primary origin in the corpus uteri—that the symptoms did not differ from those of carcinoma of the cervix, and that a correct diagnosis could only be made by destroying the cervix and introducing the finger. Gusserow,‡ in a clinical report, stated that its existence could not be denied, but that it must be extremely rare. In the first edition of Schröder's text-book (1874) there appears the earliest clinical picture. The statistics regarding its relative frequency are very variable and subject to error, since the greater number of cases reported have not

* *Op. cit.*, p. 230.
† Read before the Delaware County Medical Society.
‡ *Berl. Klin. Woch.*, No. 33, 1893.

* *Centralblatt für Gynäk.*, No. 12, 1878.
† *Ztschr. für Geburtsh. und Gynäk.*, bd. vi.
‡ *Volkm. Sammlung*, No. 18.

been proven carcinoma from microscopical examination; and, again, one man may see a number of cases and another none at all. Thus Szukits* found one case of carcinoma of the corpus uteri to 420 of the cervix; Ferrus,† one to 16; Forget,‡ one to 16.5; Schröder,§ from a collection of cases reported in the literature, one to 50; Gusserow was able to collect 80 authentic cases, and but one was observed in 429 cases at the Vienna General Hospital.

More recent writers have been more careful as regards a positive diagnosis. Williams, in the Harveian Lectures of 1886, stated that he had seen only seven positive cases; Gusserow has more recently collected 122 cases; Calderini ‖ of 150 cases of carcinoma of the uterus, diagnosed eight through microscopical examination as primary in the body; Schmid¶ reports nine out of thirty-nine cases where he did vaginal hysterectomy; Gessner** very recently writes that in the Berlin University clinic for women, since January 1, 1890, malignant disease of the corpus uteri has been diagnosed and the uterus removed fifty-eight times; at the Gynecean and University hospitals, in the service of Dr. Penrose, during the last two and a half years, there have occurred seven positive cases.

From the statistics of all authors it is shown that every form of carcinoma of the body of the uterus has occurred most frequently during the post-climacteric period and between the ages of fifty and sixty years; also that it is most often found in nulliparous women. It may, however, occur as early as in the twentieth year.

As regards the forms of carcinoma which originate in the corpus uteri, there is considerable diversity of opinion, many observers believing that there are medullary, alveolar or soft carcinoma, scirrhus or hard carcinoma, and adeno-carcinoma, which later becomes in the deeper tissues an alveolar carcinoma; and others that there exists still another form, that of malignant adenoma, or adenoma destruens. The first class of observers believe that malignant adenoma is only the early stage of an adeno-carcinoma. In my experience there is a form of malignant disease which primarily appears as a malignant adenoma—or, better, adenoma destruens—and progresses as an atypical glandular form of disease (not terminating in a well defined form of actual carcinoma) which can destroy and perforate the uterine wall, and if it is not removed early will result in the death of the patient.

The point of origin of these diseases, it is generally believed, is in the epithelial tissue of the utricular glands. Those which arise in that portion of the gland away from the uterine muscular wall grow primarily outward toward the uterine cavity, and either appear as single or multiple polypoid masses in the uterine cavity or the disease spreads over the endometrium as a diffuse growth, completely destroying the endometrium. Both of these forms of disease secondarily and rapidly infiltrate and destroy the muscular wall, and later perforate the peritoneum. Those which arise in the fundus of the gland, that portion which dips down into the muscular wall, are apt to grow as a single nodule in the uterine wall.

Thus there are anatomically three forms of growth: that which projects in polypoid masses in the uterine cavity, that which grows diffusely over the corporeal endometrium, and that which appears as a nodule in the uterine wall.

It is to be noticed here that every one of these forms of growth, primarily beginning in the endometrium, must soon infiltrate the endometrial tissue to a greater or less extent. This is a fact of the greatest importance in making an early diagnosis.

From the description of the cases reported in the literature, and from my own experience, the polypoid and diffuse forms of disease are by far the most frequent; which is also to be considered in making a diagnosis.

As the disease advances in either of the forms of carcinoma above described, the muscular wall is soon partially or completely destroyed, and although the peritoneal covering of the uterus seems to resist the infiltration much more than the other tissue, it finally breaks through, and by metastasis to the pelvic glands or distant organs or by contiguity the disease rapidly extends, and death of the patient soon follows.

Why the peritoneum here is so strongly resistant to carcinoma, it is difficult to say. I saw eight months ago a uterus removed in which the carcinoma had completely destroyed the muscular tissue of the body of the uterus, causing nodular distortions just

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* *Ztschr. der Ges. der Wiener Aerzte*, 1857.

† Cited by Köhler: Krebs und Schein Krebs' Erkrankungen.

‡ *Gaz. Méd de Paris*, 1857, No. 41.

§ Schröder's Handbuch der Krankh. der Weib Geschlectsorg, iv auflage, s. 259.

‖ *Berl. Klin. Woch.*, 1894, xxxi, pp. 354–356.

¶ *Centralblatt für Gynäk.*, No. 43, 1895.

** *Centralblatt für Gynäk.*, No. 18, 1896.

beneath the peritoneum, but in no place could the peritoneum be found perforated or infiltrated. The patient is in perfect health today, and there are no signs of a return of the disease. Winter* states that in order for the disease to give metastases or extend beyond the uterus, the peritoneum must be infiltrated.

The early symptoms of which the patients complain—those which we must ever be on the outlook for, and which demand an immediate investigation of their cause and treatment—are by no means constant. Perhaps the first and most constant symptom of carcinoma of the corpus uteri is hemorrhage, appearing either as what the patient believes is a return of menstruation after the menopause, or as an abnormally profuse and protracted menstrual flow. One of the first and most constant symptoms is pain, which frequently occurs periodically—slight and intermittent, perhaps, at first, but soon reaching a high degree of intensity; it may continue for an hour or two and then subside. This pain is early localized to the lumbar region, and later is referred down the thighs. It often simulates the girdle pains of locomotor ataxia. These paroxysmal attacks of pain are by some authorities considered almost pathognomonic of the disease. There is usually associated with these symptoms a leucorrheal discharge. As the disease advances the symptoms become more prominent: the pain increases in severity and is more widely distributed; the hemorrhage continues; and very late (only in one of the cases which I have seen), ulceration or degeneration of the carcinomatous tissue taking place, the leucorrheal discharge becoming fetid.

On physical examination the cervix is found normal, forming part of the disease only when the primary seat has been in the cervix and metastasis to the body has taken place. A condition which almost universally occurs, and should always be looked for, is the dilatation of the cervical canal—often sufficiently to allow the introduction of the index finger and curettement without preparatory dilatation. The uterus is enlarged, frequently to the size of a three or four months' pregnancy, and may be movable or fixed by adhesions. These adhesions do not necessarily indicate that the disease has infiltrated beyond the uterus; they may be the result of infection of the tubes, salpingitis or pyosalpinx.

Almost none of these symptoms, however, are constant, and it is in a typical case alone that they are found. The pain may be slight or absent; the leucorrheal discharge absent even in the later stages of the disease, or it may simply be a watery fluid, sometimes tinged with blood. In the case referred to, where the uterus was destroyed to the peritoneum, the discharge was of this latter variety. The uterus may not be very much enlarged.

The hemorrhage, as described, is the one symptom which I think is always present. Condamin, of Lyons,* however, reports two cases of what he describes as an embryonal type of carcinoma growing in the posterior wall of the uterine body—which were not associated with hemorrhage.

Again, there are a large number of diseases which are also most often seen during the post-climacteric period, and yet are not indications for the operation of hysterectomy. These diseases are: senile endometritis, fungoid endometritis, mucous polyp, a small sloughing submucous fibroid tumor, and even glandular endometritis. Here also must be considered the question as to whether a benign adenoma or fungoid endometritis is becoming malignant. Therefore it must be evident to every one that from the history of the symptoms of which the patient complains and a physical examination alone it is often impossible to conclude that carcinomatous disease is present. The dilatation of the cervical canal and digital examination, I know, may in many instances reveal nodules on the surface of the endometrium which may be carcinomatous. They may, however, be mucous or fibroid polypi or circumscribed benign adenomata. Where carcinoma of the diffuse form is present, the finger could only detect a hypertrophied, soft and friable endometrium. *From the clinical symptoms and digital palpation alone the diagnosis cannot be positively made; they are worthless in determining the form of malignant or non-malignant disease; they offer no proof that the disease is carcinoma.*

The only method of diagnosis which can at all give positive results, especially at the time when carcinoma is in its formative stage and the uterus may be removed without danger of a return of the disease, is that of microscopical examination of tissue removed by means of the curette. I believe that at least ninety per cent. of cases can be diagnosed by microscopical examination.

* *Ztschr. für Geburtsh. und Gynäk.*, bd. xxvii, s. 1.

* *Gaz. Hebdom. de Méd. et de Chir.*, 1895, No. 3.

Gessner* states that during the last five years, in the Berlin University clinic for women, it has never been necessary to employ digital palpation as a means of diagnosis in malignant diseases of the endometrium; that in forty-one consecutive cases the diagnosis was made by curettement and microscopical examination alone. In order to accomplish this, the pathologist should be thoroughly familiar with the histological appearance of every other disease which affects the corporeal endometrium, and the operator should in every instance be positive that the tissue removed represents that which is causing the symptoms, if there be symptoms, of which the patient complains. The pathologist should also know the symptoms and physical condition found.

The method which I would advise and have advised,† to insure the removal of the tissue which is causing the symptoms which lead us to suspect malignant disease of the corpus uteri, is that the uterine cavity be thoroughly and systematically curetted, and every portion of endometrial tissue removed, washed free of blood-clots, and placed at once in ninety-five-per-cent. alcohol or a ten-per-cent. solution of formalin for the pathologist. There is a slight element of danger of perforation of the uterus where the disease is advanced, but in advanced cases it is not necessary to curette so severely. All of the portions of tissue thus gained should be prepared for microscopical examination, so that if characteristic malignant adenomatous or carcinomatous tissue is present it cannot be overlooked.

Gessner,‡ in a paper entitled "Ueber den Werth und die Technik des Probecurettements," read before the Berlin Obstetrical and Gynecological Society, more recently (March 13), also advises this as the surest and best method of making a diagnosis. He believes also that in certain forms of carcinoma of the cervix uteri this method is useful.

A method which perhaps is deserving of mention where the disease is localized to a portion of the uterine wall, as in cases reported by Basche Emmet,§ Coe,‖ Ruge and Veit,¶ and others, but which has no advantage, even in such cases, over that described, has been advised by Gottschalk.* He dilates the cervical canal, introduces a finger, and, detecting a hypertrophied portion of endometrium, the specimen for examination is removed from this area with the curette.

The difficulties which pathologists who have made a study of this disease have met are as follows:

First, the determination as to whether a benign adenoma is becoming malignant, which explains a number of cases cured through one, two, or three curettements.

Second, it has been stated that although the tissue may present the histological characteristics of malignant adenoma, yet the patient gets well.

Third, a mucous polyp may appear as a malignant adenoma, and yet nearly every case gets well.

Fourth, the superficial endometrium, or that ordinarily removed by the curette, may present the features of benign adenoma or even glandular endometritis, while the deeper tissue has the characters of malignant adenoma, adeno-carcinoma, or carcinoma.

I believe it is advisable to err on the safe side and remove the uterus, even though the first question of doubt as to the conversion of benign into malignant adenoma remains unsettled, and though the second possibility of the patient's recovery, despite the malignant appearance of the specimens, be admitted. This is the method followed by Martin, of Berlin,† who has operated upon sixty cases where the diagnosis was either benign or malignant adenoma. He states that in seven cases of diffuse adenoma which were primarily curetted the disease returned in from three to seven months. He therefore advises hysterectomy also in benign adenoma. This, I think, should also have been the plan followed in those cases which have been reported as "villous degeneration of the endometrium" by Winkel,‡ Lusk,§ Matthews Duncan‖, and Goodell.¶ In these cases, since their pathological significance or degree of malignancy was not definitely known, the treatment was conservative—usually curettement, and local medication at intervals. The

* *Centralblatt für Gynäk.*, No. 18, 1896.

† "Malignant Adenoma of the Corpus Uteri, and its Diagnosis:" *American Journal of Obstetrics and Diseases of Women and Children*, vol. xxxiii, No. 2, 1896.

‡ *Centralblatt für Gynäk.*, No. 18, 1896.

§ *New York Medical Record*, 1890, xxxvii.

‖ *Ibid.*

¶ *Ztschr. für Geburtsh. und Gynäk.*, 1881, bd. vi.

* *Berliner Klinik*, heft 79.

† Pathologie und Therapie den Frauenkrankheiten, iii auflage, 1893.

‡ Die Pathologie des Weiblischen Sexual-organe, Leipsic, ii, p. 46.

§ *American Journal of Obstetrics*, January, 1878, p. 133.

‖ *Obstetric Journal of Great Britain and Ireland*, November, 1873, p. 133.

¶ Lessons in Gynecology, 1890.

for surprising results have followed when it has been administered even in apparently hopeless cases.

Recurring or continued hemorrhage after infusion can, of course, diminish the number of red corpuscles below the respiratory requirements. Hence it is a rule to arrest all bleeding before or during transfusion if in any way possible. The operation may be repeated for continued hemorrhage, but for the above reason will not hold out the same promises of benefit.

The effects of this form of transfusion are generally immediately perceptible in restoration of heart action and pulse volume, as well as in respiratory activity. The unconscious and paralyzed patient opens his eyes, perhaps speaks, and almost certainly begins to move. An hour or two later it is usual for a sharp temporary rise of temperature to occur, possibly with free diuresis.

The composition of the liquid to be infused has been much discussed, and a number of alkaline solutions have been pressed forward. One of those most widely recommended is the following:

Chloride of sodium, 50 grains;
Chloride of potassium, 3 grains;
Sulphate of sodium, 2½ grains;
Phosphate of sodium (Na_3PO_4), 2 grains;
Carbonate of sodium, 2½ grains.

This, added to a pint of distilled water, is said to yield a solution of the normal salinity of the blood. But, of course, the use of such formulas demands time and conveniences usually absent in emergencies. In hospitals they may be kept ready prepared, but even here we find simple solutions in routine use with results leaving little or nothing to be desired. Indeed, simple water has been used with success.* The mass of those who have written upon the subject, and nearly all surgeons, are, however, content with normal salt solution: 0.6 per cent. of common salt in boiled or distilled water (ʒ j to O j). If time permits, the salt should be added and then the solution boiled and cooled to the required temperature for injection. In hospitals the solution is kept in quantity ready sterilized. Some writers have employed alcohol, a drachm to the pint, or a few drops of aqua ammonia added to the injection as a stimulant.

The amount of infusion to be given differs widely with various operators. Some give the minimum quantity to restore consciousness and movement; others never less (in an adult) than a quart, while still others urge larger quantities, and as high as three quarts have been given with success. A quart may safely be taken as the minimum quantity to be administered in any adult case demanding the procedure, for it has been proved that almost indefinite amounts can be injected with safety. Again, if but little is used, collapse may again soon set in because of the lymphatics (which are also depleted in severe hemorrhage) absorbing a large amount of the circulating medium for their own replenishment. With a due regard for the amount of blood that has been lost and the condition of the pulse, together with slow injection, it will be difficult to administer too much. If it becomes evident that too little has been given —as by recurring collapse—the injection should be immediately repeated. Indeed, it is the writer's custom to leave the cannula in the vein for this purpose in desperate cases, as will be mentioned again further on.

The temperature of the infused solution should not be above 100° F. It may be below that degree, but is said to be dangerous above. The cold solution will deprive the patient of the stimulating effects of the permissible amount of heat. It is well, therefore, to have the temperature of the fluid in the reservoir a little above 100°, say 105°, so that after it has traversed the apparatus it will probably enter the circulation at about the normal body temperature.

Saline injection should always be supplemented by all of the other known methods of combating shock, which need not here be enumerated. These should be inaugurated while the fluid is being prepared, and continued during the operation and indefinitely afterwards. Especially should oxygen be administered, in order that the diminished number of red corpuscles may without difficulty be able to secure the maximum supply that they are able to carry.

Many methods of supplying saline solutions to the circulation have been brought forward. Thus, in cases of moderate severity, copious hot rectal injections may suffice. These should always be employed, whether the other methods are used or not, for surprisingly rapid absorption takes place from the rectum after hemorrhage. Leaving the abdominal cavity full of the salt solution after exhausting abdominal operations is a common method with the writer and others of combating minor degrees of hemorrhage and shock. The hypodermic or intra-cellular

* Coates. Quoted by Hunter, *loc. cit.*; Pilcher, *Annals of Surgery*, vol. 15, 1892, p. 345.

method (hypodermoclysis) is excellent, and quite sufficient in many cases, even of severe degree. This is the method for the practitioner not familiar with surgery, as nothing more than a douche-bag or syringe, a piece of tubing, and a hollow needle from the aspirator or even hypodermic case, is needed. Or the fluid may be repeatedly injected by syringefuls beneath the skin of various portions of the body until a sufficient quantity has been used. Solution thus administered is very rapidly taken up by the lymphatics and carried to the blood-vessels. The best way to use the hypodermic (intra-cellular) method, however, is to connect a small aspirator needle to a piece of rubber tubing, preferably that of a douche-bag or bottle, and, after all air has been expelled by the flowing stream, to insert it well beneath the skin of the axilla, thigh, abdomen, or chest-wall. The bag or other container is then raised to a height of about two and a half feet. This will produce sufficient hydrostatic pressure to infuse almost any quantity of fluid into the loose subcutaneous cellular tissues. Its onflow may be observed by the gradually creeping area of edema and distention. A quart may readily be thus introduced into the thigh or axilla, or even two quarts into the abdominal wall, without danger if all is aseptic. A hypodermic needle will be found almost as effectual as the larger instrument, but much more time must be allowed. If a syringe is used to inject, the work must be done slowly and without great force. The axillary method, as suggested and used by Morse,* of Norwich, England, has proved very satisfactory. The needle is thrust through the skin of the axilla "deep enough to move freely in the cellular tissue, and the fluid slowly and gently injected" until a pint or more has been used. Both axillæ may be thus filled with the solution. The great swelling produced by these injections rapidly disappears coincidently with the improvement of the patient's condition.

Several special designs of apparatus are in the market for administering solutions either by hypodermoclysis or intravenously, but are generally not to be had when wanted, or outside of large establishments. While perhaps convenient when in working order, fortunately they are not at all necessary. The writer's predilection is for a graduated douche-bottle or funnel, a three-foot length of tubing, and a needle or cannula—according to whether the injection is to be hypodermic or into the vessels. Dr. H. A. Kelly has proposed and used* an inverted aspirator bottle: the fluid is put in and the bottle turned upside down. Air is pumped into the bottle by the pump. This produces pressure above the contained fluid, which is propelled gently through the connecting tube and needle or cannula into the patient. If this apparatus is employed, it should not have been previously used to aspirate pus or other septic material, and in any case must be thoroughly boiled or steam-sterilized. But the surgeon, in all severe cases at least, generally will prefer the intravenous infusion to the already mentioned methods—always in desperate circumstances.

For this, a considerable choice of locations for the operation is available. Some prefer to inject through a vein in the operative wound if the collapse takes place during the performance of an operation; but this has serious inconveniences and may necessitate suspension of the operation while the injection is being conducted. On the other hand, the operation can be properly concluded in many instances while an assistant administers the injection at a distant point. The writer's preference is for a point that is most convenient and farthest from the heart. Hence, if the surgeon is working upon the abdomen, a leg is selected, or if upon a leg, then its fellow or an arm will be injected. The points of election are: first, the internal saphena vein as it crosses the internal malleolus; and, second, the most convenient vein (generally the median cephalic) at the bend of the elbow.

Injection into arteries has been proposed and employed by Kelly.† He injected, towards the heart, into the radial artery at the wrist. But in a recent communication to the author upon this subject he states that he is now using only the intra-cellular method, as he experienced some serious accidents with the centripetal arterial infusion —sloughing, and one patient nearly lost her whole hand.

Dawbarn‡ has successfully employed a hypodermic needle inserted into the femoral artery below the groin and connected with a douche-bag containing the saline fluid, but has found no imitators.

The method of intra-venous infusion is exceedingly simple. A constricting band is tied about an extremity above the point

* *British Medical Journal*, Jan. 25, 1896, p. 208.

* *American Journal of Obstetrics*, vol. xxx, No. 2, 1894.

† *Loc. cit.*

‡ *New York Medical Record*, vol. xli, 1892, p. 1.

selected for operation, so as to congest the veins and make them stand out. Or the limb may be made to assume a dependent position over the side of the bed or table. If this does not make them prominent (because of non-action of the heart or small amount of circulating medium), rubbing the parts in the direction of the arterial supply will generally suffice. In absence of congestion of the vein, the latter may be cut down upon cautiously in a direction diagonal to its course, and identified by dissection. Once exposed, a ligature is thrown about its lower extremity in the wound and at once tied. Another ligature is carried to its upper exposed extremity but not yet tied. The vein is now raised on some flat instrument and a small vertical incision made in its upper wall above the tied ligature by knife or scissors. Into this a cannula,* as from the aspirator case, is thrust upwards for half or three-quarters of an inch, and secured in position by tying down the upper ligature so as to bring the vein-wall tightly about the cannula. It is well not to thrust the cannula in too far, to avoid pushing it through the wall of the vein above where the vessel may suddenly change its direction, or to use a cannula with an edge at all sharp, because of the great ease with which the vein may be lacerated or perforated. It is also necessary to have the leg or arm firmly held so that the patient may not do himself injury by suddenly flexing or otherwise moving the limb. When the cannula and attached tube are in position, the fluid may be pumped through by a syringe, or, better, be permitted to gravitate from an elevated douche-bag or bottle. Some method of measuring the quantity injected is most desirable. Anesthesia is never necessary for this trivial operation. Schleich's solution, cocaine or freezing will suffice in any rare case where sensation is markedly present. But usually cases requiring intra-venous infusion are unconscious either from collapse or from an anesthetic previously administered. It must not be forgotten that the injection should be made quite slowly; that air bubbles must be rigidly excluded; that if great force is required the cannula has probably perforated the side of the vein and must be readjusted; and, finally, that so far as circumstances will permit, aseptic technique must be rigidly followed.

* The cannula and tube can best be emptied of air by filling the reservoir, letting it stream along the tube and cannula, and then putting upon the former a clip or hemostatic forceps until the latter is fixed in the vein.

In severe cases the writer, after injection, occasionally clips the tube a few inches from the wound, cuts it off two feet or less from the cannula, and then binds the clip and tube, together with the cannula still remaining in position, in an antiseptic or aseptic dressing. The clip will prevent hemorrhage from the vein. If another saline injection should later be called for, it can, by this manœuvre, be administered at a moment's notice by again joining the reservoir to the clipped tube. When it is thought best to remove the cannula, it is simply withdrawn by twisting from side to side, a stitch inserted (if it was not put in place ready for tying when the wound was made), and a dressing applied over a pad compressing the vein above and below the wound for a short distance.

The two following cases have been selected for reporting as typical instances of apparent life-saving from saline infusion, because of their other interesting features. The writer has had other successes, and of course many failures, as it is his custom to employ infusions in all bad cases of shock and hemorrhage; yet, on the whole, where there could be said to have been a fighting chance, the results have been surprisingly good.

CASE I.—Mrs. B. B., aged thirty-seven years, was seen in consultation with Dr. J. J. Owen, August 19, 1895. She was the mother of several children, the youngest being ten years old. One week before examination she had had a sudden severe attack of pelvic pain, followed by partial collapse and a profuse hemorrhage from the vagina. Dr. Owen then first saw her. She did not consider herself pregnant. Three months previously she had suffered from gastric disturbance, but there had been no delay or intermission of menstruation, although the two subsequent periods amounted to hemorrhage. On the above date a bloody discharge was found to be coming from the uterus, and a large, boggy, painful mass could be palpated on the left side, apparently involving the tube and ovary. Extra-uterine pregnancy, ruptured, was suspected, and her removal to the Pennsylvania Hospital for immediate operation was advised. Twenty-four hours were consumed in obtaining consent from relatives, but she entered the hospital early on August 20.

While being prepared for operation the woman again went into collapse, with serious bleeding from the uterus. Hence operation was begun almost at once. Upon opening

the peritoneum, blood and clots gushed forth in an alarming manner. The entire abdominal cavity was distended with the blood. Directions were given to my assistant, Dr. Thomas S. Kirkbride, Jr., to at once inject saline infusion into the left internal saphena vein as it crossed the malleolus. Meanwhile it was discovered that a ruptured left tubal pregnancy existed, and that very active hemorrhage was going on from it. The tube and ovary were hastily separated from a mass of cobweb-like adhesions, and the pedicle clamped by a large forceps, which at once controlled the bleeding. Then a stream of hot salt solution (0.6-per-cent.) was permitted to flow through all portions of the abdominal cavity, for the double purpose of washing out blood and clots and to combat shock. Amid the clots washed out, a fetus 1½ inches long came away. By this time the patient had received a quart of the salt solution into the saphena vein and had rallied considerably, although but a few moments before seemingly moribund, and a marked pulse was present at the wrist where none was detectable before. The clamp was now replaced by a strong ligature; the Fallopian tube with its contained placenta, as well as the ovary, removed; and the abdominal wound, 2½ inches in extent, closed around a glass drain by silkworm-gut sutures.

Convalescence was ideal. She was weak for a few days, but otherwise presented no adverse symptoms. Two days later she was purged with calomel, and, after the bowels moved, the drain was removed and a provisional stitch which had been put in at the time of operation was made to approximate the portion of incision through which the tube had passed into the belly. Primary union ensued.

The patient was examined eight months later and found to be in perfect health.

CASE II.—A boy, aged fifteen years, was admitted to the Pennsylvania Hospital September 8, 1895, having been stabbed by a playmate. The wound was half an inch in length, vertical, and situated immediately below the left sterno-clavicular articulation, just external to the sternum. There had been profuse external hemorrhage, but this had ceased when he was brought in. Temperature was then 97.2° and he was much shocked; pulse 128; respirations 52, shallow and jerky in character; and he could only be aroused with difficulty. Tympanic percussion resonance was present over the left half of the thorax, as well as evidence of a moderate amount of fluid in the pleura. The latter was presumed to be blood. He was stimulated by the routine methods. No operation upon the chest was thought to be practicable or admissible.

In the course of two hours his temperature had fallen to 96.4°, the shock had deepened, and he was perspiring profusely. He was blanched and almost comatose. The pulse was rapidly weakening, and there was evidence of great increase in the amount of fluid in the left thorax. Twenty-eight ounces of normal salt solution was then administered into the left median cephalic vein at the bend of the elbow. Immediately the pulse increased in volume and force, and, in the course of four hours, the temperature slowly rose to 102°. Respirations continued to be labored, but his general condition steadily improved until within fifteen hours it was entirely satisfactory save for the rapid respirations incident to the collapsed left lung. The left pleural cavity at that time appeared to be more than half-filled with blood. Following this, gradual absorption of the hematothorax took place, and on September 23—fifteen days after admission—he was discharged with normal physical signs over the affected lung and pleura.

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*TREATMENT OF SYPHILIS.**

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The treatment of syphilis is something that interests the specialist and practitioner alike, for here we have a disease which may attack in its course every tissue and organ in the body, from skin to bone and from bone to skin. Nor does age confer any immunity from its ravages, seeing the disease can be inherited as well as acquired; and well may the medical man be excused if he asks who indeed has not syphilis, rather than who has.

Without encroaching on ground where the clinical data are insufficient to adequately sustain the claims of the various lines of treatment advocated, I shall sketch what I think is a safe and practicable way for the general practitioner to handle his cases of syphilis. Certainly a prescription calling for bichloride of mercury and iodide of potassium, with some syrup and water, cannot

* Read before the Philadelphia Chapter of the Alumni Association of the Jefferson Medical College, June 1, 1896.

constitute the only means with which he is to fight this disease.

Usually your patient consults you about a sore on some part of the penis, which may or may not be the initial lesion of syphilis. Whether after-events shall demonstrate that you really had the initial lesion to deal with or not, your treatment in each case will be the same. In the first place, do not use any acid or caustic application, since in the case of a benign lesion you will certainly convert it into an inflammatory-like nodule which may lead you into error of diagnosis, and in the case of a true initial lesion you will only cause edema and retard healing. Again, you destroy nothing, seeing the chancre is merely the initial lesion or first symptom of a disease already planted in the patient. Secondly, it matters not how positive one is in his diagnosis of the sore as the initial lesion, under no circumstances is mercury to be administered before the appearance of secondary manifestations.

The sore should be kept clean, and this can be easily done by a simple dressing. Of all dressings, I much prefer the dry in the form of some powder, as iodoform, calomel, aristol, etc.

It is a well known fact that the period of incubation, up to the appearance of secondaries, is with great constancy forty-two days. Now what should we do during this period in addition to treating the initial lesion? Shall we give mercury? The answer must be No. Why? Because, until the secondaries appear, your diagnosis cannot be a positive one; and to give the mercury before a positive diagnosis of syphilis is made would, to my mind, be sufficient ground for a malpractice suit. During this time you should teach your patient how to live, by seeing that he avoids all excesses, as women, alcoholic drinks, etc. See that his digestive tract is regulated; and insist upon the proper care of his teeth by the use of a suitable toothbrush, or if necessary consulting his dentist.

When the diagnosis is positive—which will only be on the appearance of the superficial lesions of the skin and mucous membrane, and the general enlargement of the lymphatic glands, etc.—it will then be time to present mercury to the patient. This can be done by way of the stomach, or by inunction, fumigation, or hypodermic injection. I believe the administration of one of the salts of mercury by the mouth will in the average case be the most convenient and satisfactory method. It must now be decided which salt of mercury is to be given, what the dose should be, and under what circumstances the dose should be diminished or increased; and lastly, how long is the mercury to be continued. Of the various salts I think the choice lies between blue mass and the protiodide. Personally I prefer the protiodide because of the convenience of its administration and the usual absence of any intolerance on the part of the patient.

It is best, in order to get at what is the patient's tonic dose, to begin with one-seventh of a grain of the protiodide three times a day. Each day let the dose be increased by one-seventh of a grain, continuing in this manner until the physiological effects of the drug are felt, such as colicky pains, diarrhea, or slight sponginess of the gums. It is always undesirable to produce marked ptyalism. Let the physiological dose be cut down one-half, which will give you what is a tonic dose for the patient. In one case the tonic dose may be a grain, in another a grain and a half, of the protiodide in the twenty-four hours; and this emphasizes the fact that the tonic dose of each patient must be carefully ascertained. The tonic dose should be continued for eighteen months, unless new symptoms appear, when the dose may be temporarily increased. While mercury is being given in this manner, the patient should be prohibited from smoking, and any diet which may lead to diarrhea should be avoided; also let the patient always have a mouth-wash, one constituent of which should be chlorate of potassium. Patients while taking mercury should be warned about the gums, and of the tendency there will be to catch cold. I would mention the fact that mercury is not well borne by the scrofulous, the cachectic, or those having chronic renal disease. How to give your mercury in these last conditions often taxes the physician to the utmost, and calls for the fullest clinical knowledge of the disease syphilis, and a wide experience in handling it. I will ask those who take part in the discussion, how they overcome these difficulties; in other words, give us what Fothergill aptly calls "wrinkles."

After eighteen months let the patient rest for about one month from treatment, when it would be proper to start mixed treatment. For mixed treatment always use the biniodide of mercury with iodide of potassium, and never present a mixture of bichloride of mercury with iodide of potassium, because here a chemical change takes place between the bichloride and the iodide, the result being

the formation of the biniodide, and consequently, unless you are a very good chemist, you will not know exactly what dose you are giving. Again, do not give your biniodide and iodide with a syrup, which is so commonly done, as this gives rise almost always to some gastric disturbance; but rather present them with the compound tincture of gentian, which will counteract to a great extent the evil effects of the iodide on the gastro-intestinal mucous membrane. Or you may give your biniodide and iodide with some aromatic water.

The mixed treatment may be kept up for a month or two, and then stopped for two or three weeks, to be started again for a month or more and again stopped, in this way continuing for six to nine months. At the end of this period let treatment be stopped for a time.

During the third year of the disease let the patient have iodide of potassium off and on. During the fourth year he should be under occasional observation, and if in that time no symptoms make their appearance the physician will be justified in telling his patient to keep his mind easy as to the future.

Let it be remembered that mercury is the mainstay in the treatment of syphilis, both late and early, and that iodide of potassium, while playing a rôle of extreme value in the later stages, really only assists in dispelling symptoms. In giving mercury and iodide of potassium we must watch not to overdose the patient; and yet we must not hesitate to use either remedy in sufficient amount to dispel symptoms, no matter what the requisite dose may be.

Rules are made only to be broken, and the treatment of syphilis is a case in point. For example, one will frequently have cases where the patient's condition may be so grave that it is desirable and proper to stop all specific medication, treating the immediate condition and not the disease; or again, for reasons known to every practitioner, one may have to begin the treatment of syphilis with iodide of potassium and not with mercury.

I have not spoken of other well known plans of treatment, nor have I gone into detail concerning local conditions, as lesions of the skin for example, interesting as this would have been.

In conclusion I would ask those who are to discuss the paper to let me know their views on the following points: First, when can the medical man sanction marriage in such cases? Personally it seems to me it would not be safe until three years after infection, and better four or five, and in any case only when the patient has been thoroughly and successfully treated with mercury. Second, will the hypodermic treatment of syphilis be substituted for other forms of treatment, and if not what rôle will it play in our methods of treating syphilis? On this subject Dr. E. L. Keyes, of New York, says: "First, I do not think the hypodermic use of mercury suitable for routine use in syphilis; second, I believe it impossible to *cure* syphilis by a '*short course*' in this or any other method." Dr. Stelwagon is on record as having felt called upon to use this method only once in a series of from ten to twelve hundred cases of cutaneous syphilis. On the other hand, Drs. Wolff and Horwitz have very ably, within recent times, demonstrated its apparent success. Certainly when it is desired to get the patient rapidly under the influence of mercury, there is only one method to be employed, and that is the hypodermic. Its routine use is inadvisable, but this applies to other forms of treatment. In employing the hypodermic method the greatest care must be observed in carrying out the technique, otherwise abscesses and other misfortunes will result and will cause the physician to perhaps unjustly condemn a valuable means of presenting mercury to his patient.

THERAPEUTICS OF STATIC ELECTRICITY.

By Edward J. Nickerson, M.D.,
Chicago, Ill.

Notwithstanding its antiquity, static electricity has been the form least used for a generation, owing principally to the little effort heretofore made to improve upon the crude machines of the days of Franklin and Abbe Nolette. Within the last ten years a great revival of interest has occurred in this valuable therapeutic agent, and to-day we have machines which hold their charge in all weather, are reliable in every respect, and give uniformly powerful sparks and current. It must not be forgotten, however, that the wide range of efficiency of static electricity varies with and depends upon the manner of its application as well as the power of the machine itself.

Being of high electro-motive force and slight amperage, it modifies the vital processes without electrolytic alterations.

It sets free the potential energy of the or-

ganic cells, encourages protoplasmic changes in tissues, and stimulates the vaso-motor system.

There is no treatment which gives greater satisfaction to both patient and physician than static electricity in rheumatism. It eases the pain as by magic, and by its rapid oxidation diminishes the uric acid and increases the excretion of urates.

Mrs. J., Swede, forty-five years old, suffered from enlargement and stiffness of both feet and ankles, knuckle-joints, and one knee; walked with difficulty; was unable to wear shoes (except very loose cloth shoes with felt soles); great pain and soreness in all the joints; bowels irregularly constipated; appetite poor; weight 105 lbs. For many years past she had had occasional attacks of rheumatism in first one joint, then another, until four years ago the pain and soreness located permanently in the joints named, since which time she had been able to walk but little, could do no housework, and was unable to dress or undress herself the greater part of the time. Treatment by static electricity three times weekly for three months. Now she wears her shoes, walks well, does much of her housework, eats and sleeps well; pain has disappeared, enlargement of all the joints diminished; hands look nearly normal; bowels regular; weight 145 lbs. Still under treatment.

Mr. S., laundryman, age twenty-five years; neck, left shoulder, elbow, wrist and right ankle were stiff, very painful, and swollen. Two previous attacks of rheumatism had each lasted several weeks, confining him to bed. Static electricity was applied daily for ten days, when pain, soreness and swelling disappeared and patient was discharged well.

It is invaluable in tic douloureux and in intercostal and lumbo-abdominal neuralgia, affording speedy and permanent relief.

Mrs. B., about fifty years of age, had intense pain and soreness in right intercostal region, increasing upon movement; was anemic and nervous. Pain and soreness had been almost continuous for twelve years, gradually growing more severe up to December, 1895. Static electricity was then administered triweekly for six weeks; no pain since first week of treatment; both pain and soreness now gone; general health and spirits good. Discontinued treatment; no return of malady to date.

It is the only method of applying electricity without removal or disarrangement of clothing; the treatment is not unpleasant, is soothing to the nerves, and is adapted to the most sensitive persons.

In sciatica and torticollis its happy effects are quickly manifested.

Mr. J. B., age thirty-five, steam-fitter, had intense pain in left hip, extending down the leg to the heel, aggravated upon movement, and a feeling of stiffness and soreness in the whole limb. A month previously he was attacked with pain in the lumbar region, which continued as a dull ache with frequent exacerbations of a sharp lancinating character on attempting movement or change of posture. Later on, the pain traversed the hip and thigh down into the heel, sharp, piercing, and almost unendurable, which rendered any position acutely disagreeable in a short time, while any movement set up piercing pains. One application of static electricity removed pain and all soreness and made walking easy. Patient has not since reported, though two months have elapsed.

Epilepsy and paralysis of all kinds are greatly benefited, and in curable cases no other treatment acts so promptly.

Exophthalmic goitre and disorders of sensation are more rapidly improved by this than by any other means.

It promptly regulates deranged bodily functions, and in hysterical and kindred conditions is certainly without a peer.

Mrs. R., aged fifty, had constant bearing-down and dragging pain about uterus and ovaries, frequent desire to urinate, headache, backache, hot flashes over body, menstrual period becoming irregular as to time and amount, considerable leucorrhea, pain and a full heavy feeling down thighs, quite nervous and irritable, sleep poor, appetite delicate, bowels ranging from constipation with flatus to diarrhea; hair falling out rapidly, and dry and harsh. Treatment by static electricity twice weekly for four months: general appearance much improved; flesh plump; hair glossy and rapidly growing; menopause fully accomplished, no pain or uneasy sensations remaining; appetite and digestion good; sleep restful. Treatment suspended, and case lost sight of later.

Mrs. T., age about thirty, had a sense of weight and fullness in the epigastric region, accompanied by frequent pains, which were increased by slight pressure of the clothing; eructations of sour liquid; palpitation of the heart; headaches and vertigo frequent; constipation and flatulence alternating with diarrhea; muscles and tissues soft and flabby; hypochondriac; menstrual periods irregular

and accompanied by considerable pain. Static electricity was administered about twice per week for four months, when digestion became good, functional activity of all the organs was restored, muscles and tissues grew tense and plump, and color rosy. Treatment suspended; patient has not returned.

It yields agreeable and brilliant results in amenorrhea, dysmenorrhea, menorrhagia, leucorrhea, pain and congestion of the uterus and appendages, frequently establishing healthy functional activity where other and less readily applied remedies had failed.

Miss A. E., age twenty-five, stenographer, was anemic, with poor appetite, frequent headaches, constipation, dysmenorrhea, menorrhagia, leucorrhea, and dragging pain in region of ovaries. Static electricity three times weekly, for three months, resulted in disappearance of pain; periods regular as to time and amount of flow; leucorrhea subsiding; appetite and digestion normal, and patient plump and rosy-cheeked. Treatment suspended.

In old chronic ulcers of the limbs, healthy granulations are speedily set up, and perfect healing is the result.

Mr. L., age thirty-five, had ulcer on leg about three inches by two, of pallid red hue, indurated and undermined; pale, watery-looking granulations near the edges, while the centre was sloughing; old cicatrices and bluish-looking spots on various portions of the leg indicated where other ulcers had been. A history was obtained of a contused wound years previously. Treatment by bandaging, and static electricity applied daily for two weeks, then thrice per week for a month, healed the ulcer perfectly, and almost removed the discolorations of former sores.

It subdues hyperemia, edema, passive or active congestion, cystitis, inflamed testes.

C., negro, waiter, about twenty-five years old, had intense pain in right testis, with much swelling, following a case of gonorrhea. One sitting of fifteen minutes with static electricity gave entire relief from pain and a perceptible diminution in the size of the swelled organ. Case not seen again for two weeks, when patient reported as having had no further trouble since the treatment.

Because of its revulsive action on the skin and alterative effects in the deeper tissues, it promptly relieves eczema, pruritus, urticaria, etc.

When one is overworked, run down, brain-weary, or lingering along in slow convalescence from any disease, no tonic so revitalizes and builds up the system as static electricity.

Its tonic action makes it of great value in heart disease, either functional or organic, and it possesses a singular power to promote animal heat, equalizing the circulation and relieving blood-pressure.

Exudations, infiltrations, edemas, are resolved and absorbed, and the most surprising and gratifying results are obtained in anchylosed joints, contracted tendons, and stiffened muscles; the ease with which it will often cure a case of long standing is almost marvellous.

Mr. A. F. M., age forty, could not move his left knee-joint; no pain, only slight tenderness on percussion about the patella; no swelling. A deep incised wound on the knee some twenty years ago confined him to bed for months; then he got about with a completely stiff knee, which remained swollen and painful for years, but gradually improved to the condition described. Static electricity has been applied twice per week for the last four months, with the result that about half normal flexion is obtained, and treatment is being continued.

Mr. C., age thirty-four, had a stiff and immovable left foot and ankle; no pain or swelling. He gave a history of a railway accident in which he sustained a comminuted fracture of foot and ankle in 1887; remained in hospital for nine months; unable afterwards to flex foot, or to walk without a steel brace. After treatment by static electricity twice weekly for three weeks, he was able to bend his toes and walk without a brace, having nearly half normal movement. Still under treatment.

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*SALOL IN DIARRHEA.**

By M. H. Fussell, M.D.,
Instructor of Clinical Medicine, University of Pennsylvania.

The writer published in the Therapeutic Gazette of August 15, 1892, a paper with the above heading. The purpose of the present note is to confirm the statements made therein.

Frequently one is fascinated by apparently brilliant results of a certain plan of treatment, writes upon it, but soon finds it is not all that can be desired. Such has not been my experience in the case of salol in diarrhea. It

* Read before the Pennsylvania State Medical Society, May 21, 1896.

is the most useful drug I have tried, and I believe its use is founded on correct principles.

Recent writers upon the therapeutics of diarrhea give but secondary notice to salol, resorcin and naphthalin being the favorites. I have had comparatively little experience with the latter two drugs; salol has been such a useful remedy in my hands that I have not felt called upon to use other medicaments in its place to any extent.

Perhaps the best method of administration of salol is in the mixture I have before suggested, viz.:

℞ Salol, ʒ j;
Bismuth subnit., ʒ ij;
Misturæ cretæ, q. s. ad f℥ iij.
M. S.: ʒ ij every one or two hours until relieved.

This prescription may of course be varied as to dosage—for instance, giving one teaspoonful or less to young children.

The reason for combining salol with the bismuth and chalk is that it has a better effect when mixed with somewhat inert powders than when given alone. I presume also that the slight astringent action of the bismuth helps to tone up the relaxed intestine and also to relieve any irritation of the mucous membrane, and thus hasten the beneficial result.

The conclusions arrived at in the quoted paper were:

1. Diarrhea due to dietetic errors, and that which is common in adults and infants in summer, is well controlled by the administration of salol, bismuth, and chalk.

2. Opium is rarely necessary where salol is used.

3. Salol controls the abdominal pain equally as well as opium.

4. It is perfectly safe, having no bad after-effects.

5. It is especially useful in the treatment of the diarrhea of children.

6. It is of no value in dysentery.

7. It constantly corrects the fetor of the stools.

To these conclusions I would now add the following observations:

In the diarrhea of typhoid fever it acts almost as a specific. The following case well illustrates this fact:

Wm T. was sick for several weeks with a well marked case of typhoid fever. On several occasions during his attack he had outbreaks of furious diarrhea; the stools were large, watery, and exhausting. The prompt administration of the mixture I have suggested controlled the diarrhea after two or three doses.

In the annoying diarrhea which accompanies tuberculosis, either with or without a tuberculous enteritis, the action of salol is well illustrated by a case now under my care:

Mrs. F. had consolidation of left lung, with abundance of tubercle bacilli in sputum. She was sent south during the winter, but returned in much worse condition than when she left. In addition to her other distressing symptoms she suffered from intestinal pain with uncontrollable desire to defecate immediately after eating. This persisted in spite of careful regulation of the diet—indeed, absolutely no food could be taken without giving rise to pain and diarrhea. She was put on the salol, bismuth and chalk mixture, and at the end of a week could take all sorts of food. She has steadily continued free from the intestinal symptoms for several weeks now.

In the sixth conclusion in my original paper I stated that the drug was valueless in dysentery; I wish to correct that statement. The mixture will certainly *not* control the attacks of dysentery, but the fetor of the stool and the general abdominal distress are greatly relieved by its administration, and I always use it in my cases in powder form, with bismuth in larger doses.

This may seem like the vaporings of an individual gone "drug-mad," but if the reader will stop to think that diarrhea is a *symptom*, and a symptom usually due to or accompanied by fermentation of food or other material in the intestinal canal; and if he will also remember that salol is broken up into carbolic acid and salicylic acid in the intestine; he will readily see the reason for the writer's faith, even though it is impossible to put in print the very large number of cases which have been successfully treated.

It has been stated by some writers that the drug salol is a dangerous remedy. I have never seen the least untoward effect. I use it habitually until the urine has the peculiar characteristic green color, and persist in it until I get the desired effect. I have repeatedly examined the urine and found it did not contain albumin or casts, but did contain salicylic acid.

One great advantage in the use of the antiseptic treatment is that it does not leave behind it the constipation that follows opium treatment. And it does not, as opium unquestionably often does, mask the real condition of the patient. Another danger avoided

is the sudden locking of the bowels, retention of ptomaines, and poisoning by such retention.

It must always be remembered that the rational treatment of any condition is obtained only through a removal of the cause. Any physician, when called to a case in which diarrhea is a symptom, who simply prescribes salol and bismuth or any other combination of drugs, of course falls far short of his duty. The cause must always be sought for and removed if possible. The removal of the cause in our diarrhea cases will often end the trouble; but there remain an abundance of cases in which drugs must continue to be used, and in these I plead for the use of salol and bismuth to the exclusion of opium. Reserve the opium for those cases which have become irritated to such a degree that constant movements of the bowels and distressing pain continue in spite of rational treatment.

THE TREATMENT OF LARGE VESICO-VAGINAL FISTULÆ.

After discussing the various measures of surgically dealing with enlarged vesico-vaginal fistulæ, KELLY (*Bulletin of the Johns Hopkins Hospital*, vol. vii, Nos. 59–60) details an operation which he successfully practiced upon a patient aged forty, who had had a urinary fistula ever since her third labor, eight years ago; five different attempts by various surgeons to close it had all proved unsuccessful, with the result of increasing the disability because of the sacrifice of important tissues at the base of the bladder—in fact, the base of the bladder was entirely gone. The bladder was everted through the fistula and filling the vagina with an angry red fungus-like mass; on replacing this, the anterior vaginal wall was seen to be absent, and in its place there was an enormous fistulous opening in the base of the bladder.

The fistula measured 4 by 3 centimeters, and involved the anterior lip of the cervix, which was destroyed, as well as the entire neck of the bladder anteriorly (vesico-utero-urethro-vaginal fistula); in front the sharp contour of the cut-off urethra presented a marked contrast to the normal funnel-shaped neck of the bladder. Posteriorly to the right and left of the cervix the ureteral orifices opened on the edges of the fistula. Two or more centimeters of each ureter had evidently been sacrificed in the operations. The vaginal walls forming the margins of the fistula were immovably fixed on all sides and contained numerous radiating bands of scar tissue. There was not the slightest chance of bringing such tissues together by any known method of denudation or suture, so Kelly employed the following method, and covered the defect successfully. The steps of the operation were:

1. A crescentic incision separating the muscular and mucous coats of the bladder from the vagina was made around the posterior two-thirds of the fistula, and the bladder detached from the supra-vaginal cervix all the way up to the peritoneum, and widely on both sides, by a blunt dissection. It was easy to avoid injuring the ureters splinted by the catheters.

2. He next denuded a strip around the remaining anterior third of the fistula on its vaginal surface, carrying the denudation down to the mucosa of the bladder and the urethra.

3. Two flexible ureteral catheters, 2¼ millimeters in diameter, were passed through the urethra across the fistula, and one conducted into each ureter and pushed up above the brim of the pelvis.

4. The part of the bladder freed from its attachments behind was now easily drawn forward and accurately applied to the immovable anterior third, to which it was united by interrupted fine silkworm-gut sutures. Each suture caught the under surface of the muscular coat of the bladder so as to turn the cut edge up towards the newly formed bladder. The ureteral orifices fixed on this edge were in this way turned into the bladder, and escaped transfixion or compression by the sutures through the presence of the catheters which made their position plain.

He left these ureteral catheters *in situ* three days, draining each kidney directly through its ureter, and preventing any urine from entering the bladder to put a strain on the healing tissues. In the first forty-eight hours 900 cubic centimeters of urine escaped from the right ureter and 600 from the left.

The wound healed perfectly except at the upper angle on the right, where a minute fistulous sinus one millimeter in diameter remained, through which a little urine occasionally escaped.

When the patient left the ward she was able to hold 100 cubic centimeters of urine in the bladder, and did not have to void it more than once in three hours. The raw surface on the anterior vaginal wall was replaced by a firm contracting cicatrix. It is important to note the amount of control secured in spite of the destruction of the neck of the bladder.

The Therapeutic Gazette

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Leading Articles.

THE USE OF ENTEROCLYSIS IN THE TREATMENT OF SUMMER DIARRHEA.

In previous years we have called attention to the value of high rectal injections, gently made, of warm or cold water, in the treatment of the summer diarrheas of infancy which are produced by bad feeding and fermentation of food. With the advent of hot weather we wish again to reiterate our belief in the efficacy of these injections.

The lap of the nurse having been protected by a piece of rubber cloth, the child is laid across upon its back, and by the lifting of one knee of the nurse the buttocks are somewhat raised. The nozzle of a fountain syringe, the reservoir of which contains about a quart of water, is now introduced gently into the rectum, all the air from the tube having been expelled beforehand by allowing some of the water to run through it. The reservoir should be held at a not greater height than eighteen inches or two feet above the buttocks, as a greater pressure will cause the bowel to at once expel the liquid and produce some griping. If desired, a two-way catheter can be employed so that the liquid runs out of the bowel as fast as it runs in. If the temperature of the child is very high, the use of cool water injected in this way will aid materially in overcoming the fever; or hot water used in this way will preserve the temperature in the face of collapse. Whether hot or cold water is used, the bowel is cleansed. Should there be much tenesmus and rectal irritability, it will be found that the injection of one or two drachms of sweet oil containing from one to five grains of iodoform will allay the irritability of the bowel and permit the injection of water with less bearing down and tenesmus.

According to Dauchez, in the *Revue Mensuelle des Maladies des l'Enfance* for May, 1896, this treatment is also of value in the chronic diarrhea of infancy in which there is a glairy mucous discharge due to an enteritis. He recommends that in addition to ordinary water some extract of rhatany and mucilage of acacia be injected. If there is any doubt as to the purity of the water, it should be boiled before it is injected. In other instances hyposulphite of sodium in the proportion of two drachms per pint of water, to which has been added a little mucilage of acacia, may be given night and morning in this manner, with advantage. Tincture of benzoin may sometimes be given in the proportion of five parts to three hundred of water. Often it is well to give small doses of castor oil to free the bowel of mucus and fermenting material. Dauchez quotes another French author, as follows, in regard to the rules which should govern this treatment: First, the greater quantity of hot liquid, the better. Second, the pressure should not be too strong. Third, the injections should be made slowly. Fourth, the position of the patient should be horizontal.

CONTRA-INDICATIONS TO THE USE OF SALOL.

The chief reason for the introduction of this compound of carbolic and salicylic acids into the materia medica list was the fact that it was found to exert no irritant action upon the gastric mucous membrane, because it only becomes soluble after entering the intestine, where the alkaline juices of this portion of the alimentary canal speedily dissolve it. Because of this peculiar property, salol was recognized as a valuable drug, capable of being used as an efficient intestinal antiseptic, whereas the salicylates were

to a certain extent absorbed from the stomach and so exercised comparatively little influence upon the alimentary canal. Again, the use of salol was recognized as a valuable therapeutic test, as by examination of the urine some idea could be gained of the rapidity with which it was passed through the stomach into the bowel and absorbed into the blood, thereby indicating the motive power of the muscular fibres in the gastric wall.

After salol had been used as an antirheumatic remedy for several months, some of the profession began to appreciate the fact that the large percentage of carbolic acid which it contained rendered it an unsafe drug if administered in very large doses. As the carbolic acid is present in the proportion of forty per cent., the administration of 100 grains of salol in twenty-four hours would be very apt to produce symptoms of carbolic-acid intoxication.

Soon after this, Hesselbach made a report upon the action of this remedy, in which he pointed out that it had a distinctly irritant action upon the kidneys, and that nephritis, either acute or subacute, was a contra-indication to its use. Even chronic nephritis may be considered as a condition in which the physician should administer salol with the greatest care.

Our attention has been called to the importance of this matter more recently by a short note contributed to the *University Medical Magazine* for April, 1896, by Dr. James Tyson, of Philadelphia. He reports two cases, in the first of which, for the purpose of controlling a severe diarrhea, he administered ten grains of subnitrate of bismuth and five grains of salol in one dose. The diarrhea promptly ceased, but the urine (which had previously been copious) suddenly decreased and was finally suppressed, the patient dying two days later, notwithstanding all the measures that could be resorted to for the purpose of restoring renal activity. The second case was that of a woman pregnant with her second child, and suffering from a severe nephritis of pregnancy. The urine was almost solid with albumin, very dark in color, and contained a large number of casts and altered hemoglobin. Under appropriate treatment the urinary conditions greatly improved, but later on diarrhea began, and on the administration of the same dose of salol and bismuth for its control the urine again became dark in color and all its abnormal characteristics were reinforced. Appropriate treatment in this instance restored the renal function, and the mother survived after she had been delivered of an eight months' child.

These cases of Dr. Tyson's illustrate, therefore, the correctness of Hesselbach's original opinion.

There is one point in connection with the report of these cases, however, which is of peculiar interest to every practitioner, and this is that when an active diarrhea complicates nephritis the physician must always be careful not to check it too rapidly, since the purging is frequently an effort at elimination, and the production of constipation by the administration of remedies may, by throwing an increased strain on the kidneys, result in failure of these organs, with the secondary development or uremic symptoms.

A CRITICISM ON THE USE OF ANTITOXIN IN DIPHTHERIA.

The THERAPEUTIC GAZETTE has published from time to time, in its editorial and Progress columns, interesting information concerning the results obtained in this country and abroad by the use of antitoxic serum in the treatment of diphtheria. Long since it was evident to those who watched the progress of this new method of treatment that a distinct gain in the therapeutics of this malignant disease had been made, and that, while it might take several months or years before we would be able to place the remedy in its appropriate niche, we had certainly gained a most efficient aid in its introduction. These conclusions, which were at first reached by reason of the favorable reports of single investigators, were crystallized and made more positive by the very able summary prepared by Professor Welch, of Johns Hopkins University, in the fall of 1895, in which he gathered together all the statistics which had been published up to that time, and this enormous amount of material showed beyond all doubt that the mortality of diphtheria under the influence of antitoxic treatment was materially decreased. Throughout this entire period, however, there have been certain practitioners who have chosen to array themselves against this method of therapeutics, and while quite a number of the more prominent of them have been gradually converted to its support from time to time, by the good results which have been achieved, there are still one or two who main-

tain their opposition and who occupy positions which enable them to speak with apparent authority and consequently influence a large body of the medical profession. One of these is Dr. Winters, of New York, who has from the first taken the attitude that diphtheria antitoxin was of no value in the treatment of diphtheria; he has spent time, money and energy in the endeavor to prove that the majority were in the wrong and that he was in the right. The most notable contribution condemning the antitoxin treatment which he has made to medical literature was published in the *Medical News* of June 20, 1896, and consisted of a paper which he read before the New York Academy of Medicine on May 21, 1896. It is evident after reading this paper that Dr. Winters is animated more by a desire to prove that he is right than to discuss the antitoxin treatment with a perfectly unbiased judgment, for the figures which he gives do not by any means prove his assertions, and the cases which he reports are simply evidences of the fact that some cases of diphtheria are bound to die, do what we will for their relief. So far as we know, no one has claimed that any remedy has ever been invented which will absolutely cure all cases of any disease capable of producing death. Further than this, it is only right to remember that even in those instances which he cites as cases in which the antitoxin was administered early in the disease it is perfectly possible that as a matter of fact the disease had already been in existence for so long a period as to have made serious inroads into the patient's vitality. The mere fact that the antitoxin injections were given soon after the membrane was first seen in the throat does not prove that they were given very early in the disease.

At the same meeting Dr. Brannan, who is a colleague of Dr. Winters in the Willard Parker Hospital in New York, criticised in the most able way Dr. Winters's conclusions, and showed that his views were opposed to the views of all of his colleagues on the staff of this hospital, and furthermore that many of his assertions in connection with the cases treated in this institution were distinctly incorrect. Thus, it was stated by Dr. Winters that since the introduction of antitoxin into the hospital there had been a much greater use of stimulants in the cases of diphtheria. Dr. Brannan, on the contrary, proved, by looking up the records of the institution, that there had been an actual and considerable decrease in the amount of stimulants used during the time antitoxin was employed. Again, Dr. Winters asserted that he had seen a peculiar type of broncho-pneumonia, suppression of urine, and increase of albuminuria, under antitoxin treatment, and in some instances great cardiac weakness. Dr. Brannan, on the contrary, and his colleagues, with the exception of Dr. Winters, have not been able to see any such results in the same hospital from which Dr. Winters draws most of his conclusions; and Dr. Brannan points out that the death-rate in 1894 (previous to the use of antitoxin) was thirty-four per cent., and in 1895 (under the antitoxin treatment) about twenty-five per cent.

Dr. Brannan concludes his criticism of Dr. Winters's paper in the following words: "His descriptions of cases of antitoxin poisoning in the Willard Parker Hospital have no sound basis in fact, and they have not been confirmed by other observers, though they were published to the world more than one year ago."

THE ULTIMATE RESULTS OF FRACTURE OF THE LEG.

In hospital statistics, and too often in those of private practice, reports of simple fracture include only cause, nature, and symptoms of injury, deformity, method of treatment, and date of the patient's discharge with the bone firmly united.

Unfortunately for the person who has sustained fracture of any of the larger bones—the leg, for instance—this record of cure (on the thirty-fifth day to the forty-ninth, for instance) signifies the epoch at which his troubles begin. If, in the case of fracture of the leg, he is poor and has been confined to a hospital ward for five to seven weeks, after one or two weeks further spent in not too carefully applied massage, the application of bandages, and the making of some efforts at walking, thus accustoming the blood-vessels of the part to the change of pressure incident to the upright position, he is discharged, in the majority of cases utterly crippled as far as the regular pursuit of his vocation is concerned. The slow, painful, often unintelligent, efforts he makes at regaining full power, are sometimes rewarded with success, but too often fail definitely. The records of these cases are not to be found in a study of surgical literature, and yet the chief function of the surgeon in a case of fracture should be the accomplishment of a perfect functional cure. The

uniting of a fracture is simply one essential step towards this end.

In this relation a paper by Jottkowitz is most timely. He, guided not so much by broad humanitarian motives as by the requirements of an insurance company, has made a careful statistical study of the ultimate functional results of seventy-one fractures. For the patients suffering from these injuries the insurance company was required to pay during the time of their disability, and this payment was continued in proportion to the amount of disability after cessation of treatment. These conditions necessarily entailed a very careful study of each individual case.

Of these 71 fractures the average number of days spent in the treatment of each was 116; fifty-four days were devoted to direct surgical treatment, with the idea of producing firm union of the bone; forty-two to medico-mechanical treatment. Of this number, 39 were functionally perfect at the end of treatment — 34 of these within the first three months, 5 within the first four months; 32 were still partially crippled, the disability amounting to ten to twenty per cent. in 3, twenty to thirty per cent. in 18, and thirty to forty per cent. in 11.

Of 40 malleolar fractures, perfect function was obtained in 31 after an average of eighty-nine days' treatment. Of the remaining 9 cases the greatest disability was not over forty per cent.

Of 31 fractures of the diaphysis, 8 were functionally perfect in 151 days. After this period one was disabled to the extent of twenty per cent., 15 to the extent of thirty per cent., and 7 to the extent of forty per cent. The disability was in no case due to vicious union or failure to unite. Usually it depended upon a slight grade of anchylosis, hypertrophy, callus, muscular atrophy, or recurrent edema on exertion, especially in old people. Pain and weakness on motion were also often causes of disability and were only accepted, in the absence of definite lesions, from those whose character and reputation gave them a right to be believed.

In a tabulated statement, Jottkowski showed that the average time of treatment for malleolar fracture was ninety days, for fractures of the tibia and fibula 120 days.

At first glance these figures seem extraordinary. That it should take an average of three months to definitely cure malleolar fractures, and four months to produce the same result in fractures of the long bones of the leg, with failure to attain perfect functional results in nearly fifty per cent. of the latter class, seems most unsatisfactory. This undoubtedly is because we have become so habituated to using the word "cure" in regard to fractures as denoting union, and have so completely lost sight of the need for attaining easy complete function, that we have unconsciously accepted the doctrine that all fractures are cured in four to six weeks.

It is to be noted that Jottkowski employed systematically and persistently Swedish movements, massage, electricity, douching, and all the motions commonly employed for the local stimulation of nutritive processes. It cannot be doubted that his statistics are practically far better than those which could be gathered in any hospital in this country. Nor is the lesson which these figures teach hard to deduce. In our hospital cases the patients should not be dismissed in five or six weeks, but should be kept for twice this time and subjected to systematic medical treatment with the idea of accomplishing perfect functional results. If it is impossible to keep them under observation, they should be carefully instructed as to the proper methods of stimulating nutrition and of overcoming muscular weakness, rigidity of joints, and vaso-motor paresis. By contrast tables Jottkowski shows what a great ultimate gain results to the insurance companies from thus keeping patients under observation and treatment.

To wealthy patients treated in their own homes these remarks do not apply, but unfortunately it is on the poor and on those least able to bear the consequences of even a slight disability that fall the serious sequelæ of a fracture of the leg treated only to the stage of knitting.

Reports on Therapeutic Progress

FACIAL ERYSIPELAS TREATED BY ANTI-STREPTOCOCCIC SERUM.

GONIN (*Lyon Méd.*, Feb. 23, 1896) reports the case of a man aged fifty, whom he saw in January last, two days after the onset of the disease; the nose, the right cheek, and the skin over the right malar bone were red, enormously swollen, and shiny. Vomiting had set in the day before. Pulse 120, regular; rectal temperature 104.5°; heart and lungs normal. A draught of hypnal (2½ grains) and inunctions of the inflamed part with guaiacol in glycerin (1 in 5) were or-

dered. Only one inunction was given. The bowels were kept open by Hungarian water. Next day (Jan. 17) the rectal temperature was 104.5°, the patient excited and delirious; had vomited twice; pulse 125; the erysipelas had spread. Five cubic centimeters of Marmorek's anti-streptococcic serum were then injected into the abdominal wall. January 18: Vomited twice; bowels open; pulse 88; rectal temperature 101.1°; general condition improved; no nausea; local condition subsiding; no reaction at injection puncture. January 19: Cervical and submental glands, which had been enlarged and tender, no longer so; no more vomiting; feels comfortable; tongue cleaning; local signs further subsiding; pulse 64; temperature 97.8°. A second injection of five cubic centimeters of serum was made into the left lumbar region. January 20: Swelling and other local signs disappeared, only desquamation being present; pulse 68; temperature 97.5°; convalescent. January 27: Resumed work.

Thus the serum caused a fall of temperature of 3.6 degrees in twenty-four hours, and cut short the erysipelas in forty-eight hours. —*British Medical Journal*, March 21, 1896.

THE TREATMENT OF GOITRE.

K. P. SERAPIN (*Vratch*, February, 1896), on the grounds of practical and experimental experiences, comes to the following conclusions: (1) Under thyroid treatment the goitre diminishes in size, and may even sometimes return to its normal condition; (2) when the treatment is carefully carried out and the effect watched, no complications occur; (3) it has also a beneficial influence upon the nervous system.—*British Medical Journal*, March 21, 1896.

TRIONAL.

SCOGNAMIGLIO has made a study of this substance as a hypnotic (*Revista Clinica e Terapeutica*, No. 11, 1895). Trional he finds has very important effects in melancholia, mania, and many nervous affections; he endorses the observations of Spitzer in pulmonary affections, neuralgia, and other conditions of pain, and mentions surprising results obtained in the lancinating pains of tabes. He also quotes Claus as having found trional useful in very young children—dose from one to twenty grains, according to age; the drug seems to produce sound physiological sleep in about ten or fifteen minutes. According to Scognamiglio, trional produces no bad effect on either the circulatory, respiratory, or digestive system. Perhaps the most important point in the author's investigations is in reference to the effect of the drug upon the kidneys. It has been stated by many observers that the exhibition of trional produces hematoporphyrinuria. The author, therefore, made a series of experiments with the drug on dogs and rabbits, and also special observations on the urine of persons who were taking it. In the case of animals a daily examination of the urine was made with negative results as regards the presence of hematoporphyrin (the dose being for dogs seven to fifteen grains, for rabbits one to seven grains, per diem). The kidneys of two dogs dying during the experiment were submitted to careful microscopic examination, and in each case only hyperemia was found. On the other hand, in the case of two dogs the dose was greatly increased (forty-five grains per diem), till on the third day the urine was blood-colored and showed the presence of hematoporphyrin. In the case of patients taking the drug, most careful examination failed to show the presence of this substance.

From his clinical and experimental experiences the author is strongly of opinion that in trional we have a powerful and safe hypnotic when given in doses of fifteen to thirty grains per diem; that in its action it is superior to sulphonal, chloral hydrate, and morphine; and that hematoporphyrinuria as a result is greatly exaggerated.—*British Medical Journal*, March 21, 1896.

HYPODERMIC INJECTIONS OF QUININE.

We are told in the *Journal des Praticiens* of March 21, 1896, that BLUM, a French Army surgeon, has had occasion to employ quinine by hypodermic injection in a large number of cases, with very good results, and that he recommends the solution first proposed by Kelsch. This is composed as follows:

℞ Hydrochlorate of quinine, 45 grains;
Antipyrin, 30 grains;
Distilled water, 1½ drachms.

The preparation of this solution is quite readily made. A test-tube having first been rendered perfectly clean, boiling water is placed in it, and the ingredients added; these immediately dissolve, and the solution boiling hot is filtered through a sterile piece of muslin or a sterile paper. As soon as the liquid cools sufficiently, a hypodermic syringe

is filled, and, the skin having been carefully disinfected, an injection is given.

Blum states that in cases of remittent malarial fever in which the stomach is in such a condition that quinine cannot be given, and the fever must be overcome, this treatment is useful, and also that it is of value in cases where malarial poisoning is so grave that active anti-malarial influence must be brought to bear at once. The dose of the solution is fifteen minims for adults and from five to ten minims for children. Should the malarial fever take an algid form, thirty minims of ether are injected simultaneously. By means of this method of treatment a fall in the fever usually takes place much more promptly than when the drug is given by the mouth. The object of combining the antipyrin with the quinine is not to aid in the solution of the latter drug, but for the purpose of exercising an influence upon the nervous symptoms as well as in reducing the fever. Sweating is not profuse after this treatment, it is stated, and the injections are absolutely painless.

[The general experience is that injections of antipyrin always produce considerable pain when first given.—ED.]

THE DANGER OF DIPHTHERIA ANTITOXIN.

Professor Langerhaus's recent proclamation that his little child had been killed by the use of the diphtheria antitoxin was pathetic, even if it was sensational. Sudden death may be expected to occur now and then, immediately after such a procedure as the subcutaneous injection of anything, be it so simple as distilled water, whether as a mere coincidence or through some subtle connection as cause and effect. However, every case of the kind ought to be put on record.

Two instances of the untoward action of the serum have lately been related in the *Journal of the American Medical Association.* One of them, recounted by Dr. James L. Taylor, of Wheelersburg, Ohio, occurred in the practice of Dr. S. S. Halderman, of Portsmouth, Ohio. Some of the members of a family were affected with a mild form of diphtheria, and the Doctor administered a prophylactic dose of Behring's serum, fresh, beneath the scapula of a boy, five years old, belonging to the family, in whom the disease had not appeared. The boy was asleep when the injection was given, and up to that time had seemed to be in perfect health, but in five minutes he was dead. "The Doctor had withdrawn to another room to refill his syringe for use on another child," says the account, "when the mother noticed the boy's lips puffing up and called to him that something was wrong with Willie. By the time the Doctor reached the child, breathing had ceased."

The other case was one in which Dr. C. C. Gratiot, of Shullsburg, Wisconsin, was called to a father and daughter, a child five years old, who had diphtheria severely. He treated them both successfully with Behring's antitoxin. The wife, who was nursing her husband and child, complained somewhat of her throat and asked the Doctor to examine it. He found nothing but a little redness of the arches of the fauces; pulse and temperature were both normal, and appetite was good. The woman was apparently in good health, but was fatigued from broken rest. As she was all that the sick ones had to depend upon for a nurse, the Doctor advised her to take a prophylactic dose of antitoxin, and she consented. As he did not have the prophylactic preparation with him, Dr. Gratiot used No. 1, green label, 600 units strength, Behring's Op. No. 253. In a few minutes after receiving the injection, over the right breast, with every aseptic precaution, the woman complained of feeling faint, her pulse went up to 100 and was almost imperceptible at the wrist, she became very pale, her feet and hands were cold, her breathing was hurried and shallow, pupils dilated, and face covered with a cold perspiration. The Doctor laid her down, with her head low, and gave her stimulants. It was six hours before she rallied so that she could sit up, and twenty-four hours before she was herself again.

Dr. Gratiot briefly mentions another case in which he noticed similar symptoms, but not so severe, from the use of a prophylactic dose of antitoxin in a child nine years old.

Whatever may be the final verdict of the profession as to the merits of the antitoxin as a remedy in diphtheria, says Dr. Taylor, the facts should not be lost sight of that it is a most powerful agent, that the contra-indications to its use are not yet well ascertained, and that it may be an active instrument of great evil as well as of possible good. He thinks it is not often that the evidence of the ill-effects of an alleged remedy is as clear as it was in the case related by him; it was given as a prophylactic to a healthy child, so that the result cannot in any degree be imputed to disease. We

think it may be well to bear in mind also that syncope induced by a slight cause may be very serious, even fatal, and we question the wisdom of administering a subcutaneous injection to a sleeping person. The direct agency of the specific properties of the serum in producing the fatal result in Dr. Halderman's case seems open to considerable doubt. Nevertheless, it must be conceded that the utmost caution should be employed in the use of the diphtheria antitoxin.—*New York Medical Journal*, April 25, 1896.

THE TREATMENT OF ACUTE CROUPOUS PNEUMONIA.

In the *Revue Internationale de Médecine et de Chirurgie* of March 25, 1896, CASSINE contributes a paper with this title. He points out the absolute necessity of placing the patient in a large, airy room; the sputum should be received in cloths, which should be immediately destroyed, and the condition of the mouth, nose and intestinal canal should be carefully looked after during the entire course of the illness. Mild diuretic waters are of value for the purpose of maintaining urinary secretion and of washing toxic materials from the body. Broths are also useful in the way of nourishment if they are properly made.

When the disease is once thoroughly established it is often necessary to support the heart, which is apt to flag under the combined influence of the obstruction to the flow of blood in the lung and the toxic materials produced by the micro-organisms. To overcome this cardiac failure, digitalis is useful either in the form of the infusion, the fluid extract, or the tincture, the dose of the latter preparation varying from five to twenty drops. Should the heart show evidences of failure, it is well to employ subcutaneous injections of a solution made as follows:

℞ Boiled distilled water, 3 drachms;
Caffeine,
Benzoate of sodium, of each, 40 grains.

Two or three hypodermic syringefuls of this solution may be given in twenty-four hours. For the reduction of the temperature, numerous methods may be resorted to. Antipyrin is not to be advised, because of its influence upon the blood. Sulphate of quinine may be used as an antipyretic and for supporting the system, in the dose of two to three grains, but very often as much as thirty to forty grains is necessary before any antipyretic influence is felt, and such doses often depress the heart. Cold compresses may often be applied to the chest with advantage, but cold baths can only be employed in a limited number of cases.

Should the pneumonia attack a person who is markedly feeble by reason of old age, excessive use of alcohol, or similar causes, it is of vital importance that the nervous system and the heart be supported. Under these circumstances Cassine believes that digitalis is by no means as useful a remedy as caffeine, and that with caffeine we should administer alcohol, the acetate of ammonium, and ether, and even perhaps such drugs as kola, coca, and nux vomica. Counter-irritation in the form of blisters is not to be applied in this class of cases.

Should croupous pneumonia attack a child, care should be taken to maintain the strength by the proper administration of nourishment, by the maintenance of free diuresis, and by careful attention to the condition of the alimentary canal. Small doses of alcohol, or even of digitalis, may be used if they are necessary; and if the temperature is excessive and is associated with shortness of breath, insomnia, and cerebral excitement, a hot bath repeated four times a day, to which has been added a small quantity of mustard, will prove of value.

In the great majority of cases of croupous pneumonia occurring in children the illness is not exceedingly severe, and recovery takes place.

INDIGESTION OF STARCHY FOODS.

WILCOX, in a paper with this title in the *Medical News* of April 11, 1896, after a general discussion of the topic and the report of several cases, concludes as follows in regard to taka-diastase:

The foregoing cases, with a number of others, have been under observation a sufficient length of time for arriving at a fair conclusion as to the value of the remedy. In but two instances have been noted any markedly unpleasant results from the administration of diastase. One was of a young man who came to the writer suffering from acute intestinal indigestion from dietary indiscretion, whose symptoms were apparently unchanged, excepting increased nausea after the administration of the remedy.

Nor is the writer certain as to the proper dosage; it is possible that one or two grains may be amply sufficient; on the other hand, he knows of no reason why the maximum dose (six grains) may not be exceeded with

safety. Theoretically that amount should be ample. Personally, the writer has come to prefer its administration in the form of a powder, and in that form it seems to retain its properties. All-important is the diagnosis, that it shall be exact. Accessory means for the relief of by-symptoms should not be neglected.

We may fairly conclude that taka-diastase is useful:

1. In many cases in which the symptoms were wrongly attributed to proteid indigestion.

2. In the vast majority of cases as a substitute for the inefficient pancreatic extracts, malt mixtures, and various combinations hitherto employed.

3. For the same relief of amylaceous dyspepsia which, in the case of proteid indigestion, is obtained by acids and pepsin.

4. As a successful method by which the patients can preserve their nutrition upon a mixed diet.

THE USE OF NUX VOMICA OR STRYCHNINE IN THE DISEASES OF CHILDREN.

In *La Médecine Moderne* of March 28, 1896, COMBY, after some preliminary remarks upon nux vomica and its alkaloids, takes up the indications and contra-indications for its use. He insists upon its great value in the treatment of the later stages of cerebral paralysis and paralysis resulting from lead-poisoning, in incontinence of urine from atony of the sphincter, and in all forms of toxic paralysis as represented by diphtheria. He also believes it to be a valuable remedy in spermatorrhea, in hysterical paralysis both motor and sensory, such as aphonia, hemianesthesia and amaurosis, and facial paralysis. He quotes Trousseau as stating that even in chorea full doses of nux vomica may be given with advantage. Strychnine is also useful in conditions of heart disease in which there is feebleness of this organ resulting from sudden collapse or in the course of infectious disease. He also thinks it of value in the paralysis of embolism, in atony and dilatation of the stomach, and in constipation.

The only contra-indications are those in which there is marked reflex excitability of the nervous system.

After stating that the drug may be well administered to children in the form of small pilules or cachets, he adds that he is in the habit of using small cachets containing the following powder:

℞ Powdered nux vomica, 1-5 grain;
Bicarbonate of sodium, 3 grains;
Calcined magnesia, 3 grains;
Pepsin, 2 grains.

One such cachet is to be given morning and night, after meals, to a child of from three to five years; this treatment should be continued for ten days, then suspended for ten days, and then recommenced. The pepsin renders the stomach more tolerant and is valuable for digestive purposes, while the calcined magnesia exercises a favorable influence over any tendency to constipation. If there is a tendency to diarrhea, he replaces the calcined magnesia by salicylate of bismuth.

For nocturnal incontinence of urine the following may be used:

℞ Extract of nux vomica, 1-6 grain;
Reduced iron, 2 grains;
Powdered quassia, 2 grains;
Syrup of acacia, sufficient to make one pill.

[It is to be remembered that iron will very frequently produce incontinence of urine in children.—ED.]

For atonic dyspepsia the following prescription may be used:

℞ Tincture nux vomica, 15 minims;
Tincture calumba,
Tincture gentian, of each, ½ drachm.

Five to ten drops of this may be given after each meal to a child of five to ten years.

Another prescription for incontinence of urine which Comby believes to be useful is in liquid form, as follows:

℞ Tincture nux vomica, 5 minims;
Tincture rhus aromatica,
Tincture cinchona, of each, 45 minims.
Ten to twenty drops at night before retiring.

The author even claims that in cases of rectal prolapse in children strychnine is of value when given by hypodermic injections, and he directs that twenty minims of the following solution should be injected hypodermically once or twice a day:

℞ Sulphate of strychnine, 1-6 grain;
Distilled water, 3 drachms.

In the treatment of chorea as much as one-twentieth of a grain of sulphate of strychnine may be given daily until full physiological effects are developed. [We should not care to employ this treatment.—ED.]

Comby also believes that strychnine may be used by inunction, as follows:

℞ Lanolin or lard, 1 ounce;
Strychnine, 5 grains.
Rub a small piece of this ointment into the skin night and morning.

Should the child seem at any time during the administration of strychnine to be suffering from the excessive effects of the drug, the stomach is to be washed out, and narcotics such as chloral and bromide of potassium, with inhalations of chloroform or ether, resorted to.

TREATMENT OF VARICOSE ULCERS BY MEANS OF ALOES.

In the *Journal des Praticiens* of March 21, 1896, we are told that COFFIN treats ulcers of the legs in the following manner: After the leg has been washed with hot water or with feebly carbolized water, it is dried by the application of sterilized absorbent cotton, and then painted with tincture of aloes. If the ulcer is superficial, it is only necessary to pass the brush over once or twice; but if it is deeper, a thorough application of three or four coats of the tincture should be resorted to, the patient resting until the application is dry. This application is made for several consecutive nights; it is apt to cause very considerable pain, which, however, rapidly disappears.

The dressing after each application should be covered with rubber dam. After recovery, a flannel bandage should be employed to support the skin.

THE TREATMENT OF SURGICAL TUBERCULOSIS IN CHILDREN BY IODOFORM INJECTIONS.

During the last six years at the Children's Hospital at Basle, most cases of so-called surgical tuberculosis have been treated in a routine manner by injections of iodoform in sterilized olive oil or glycerin (oil being preferred), a ten-per-cent. solution being used. WIELAND has given the results in a recent article.

In cases of tuberculous abscess the quantity of oil injected has varied from twenty to fifty cubic centimeters. Before the injection, the abscess is evacuated and irrigated with a four-per-cent. solution of boric acid. If the abscess again fills, after the lapse of a few days the iodoform injection is repeated. This treatment is continued for a long time. Compression is maintained by means of a flannel bandage, and the member is kept at rest by a suitable retention apparatus.

Out of twenty-one tuberculous abscesses treated by this method, the author records sixteen complete cures. Four left the hospital before definite recovery was obtained. In one case there remained a fistula which would not heal, and which in three months caused a septic infection of the abscess. The seat and dimensions of the abscess are without importance from the point of view of rapidity of the cure. Sometimes a large abscess will get well after one injection; at other times little ossifluent abscesses (as of the ribs) get well only after a series of injections. Abscesses of rapid development accompanied by fever resist this kind of treatment the most. Fourteen of the twenty-one patients were seen again after the lapse of two years or more; eight were quite well, having had no return of the local tuberculosis. In one case there had been a relapse, but incision and curettage of the abscess had been followed by a definite cure. One patient long had a fistula, but ultimately got well. Four died one or two years after leaving the hospital, one of tuberculous meningitis and general tuberculosis, three of amyloid degeneration of the internal organs.

Out of twelve cases of tuberculous arthritis —four of the hip and eight of the knee—nine got well under the iodoform injections. In two cases of coxitis only a simple amelioration was obtained. In some cases recovery from the arthritis was coincident with some shortening of the limb or anchylosis. Of the eight cases afflicted with arthritis of the knee-joint, several were complicated with ossific deposits. It matters little, as far as the chances of cure are concerned, what may be the age of the patient or the duration of the arthritic lesions. The number of injections has varied from a minimum of six to a maximum of thirteen, and the duration of the treatment has been from two to six months. Five of these children who left the hospital cured were seen later on; four still remained cured, while in one there was a return of the arthritic affection. In only one of the cases the movements of the knee were possible, though limited; in all the others there was complete or almost complete anchylosis, with a certain tendency to flexion. One patient succumbed to miliary tuberculosis one year after leaving the hospital, notwithstanding the absence of the articular disease.

Two of the four cases of coxitis got well, although one of them was complicated with abscess. One of these two subsequently succumbed to broncho-pneumonia following measles. In the other, after two years and a half the hip was completely anchylosed, though presenting no symptoms of arthritis.

The iodoform injections have also given

good results in many cases where they have been used conjointly with or supplemented by various surgical means (curettage, orthopedic appliances, etc.), but the radical operations have comparatively seldom been found necessary. Of course, none of the resources of hygiene or medical therapeutics must be neglected. The cases most rebellious to the iodoform injections are those in which the tuberculous arthritis is accompanied with grave suppuration with peri-articular abscesses. This mode of treatment has, moreover, its disadvantages, for its long duration subjects the patient to the dangers of iodoform poisoning. In four cases, Wieland has seen symptoms of poisoning follow these injections; two of these were attacks of acute nephritis. It is important, then, to use great prudence and to examine the urine after each injection of iodoform oil.—Leading article in *Boston Medical and Surgical Journal*, April 9, 1896.

PILLS FOR PYELITIS.

℞ Oil of turpentine,
Finely powdered camphor, of each, 1½ drachms;
Extract of opium, 4 grains;
Extract of aconite root, 3 grains.

Make into sixty pills. One of these pills is to be given every eight hours, and after it a small coffeecupful of an infusion of scoparius.

—*Journal des Praticiens*, March 28, 1896.

THE TREATMENT OF BURNS BY PICRIC ACID.

According to the *Revue Internationale de Médecine et de Chirurgie* of March 25, 1896, PAPAZOGLOU, in a Paris thesis for 1896, recommends from practical experience the employment of picric acid in the treatment of burns. He claims that the application of the solution of this acid to the burn does much to relieve pain; that it is antiseptic and prevents or clears up suppuration; that it favors cicatrization and healing of the skin; and that if applied immediately after the accident it prevents to a great extent the formation of blebs and cutaneous congestion. Where burns are very extensive the patient may be immersed in a bath of picric acid; if the lesions are limited, a picric-acid solution may be placed upon antiseptic gauze and applied to the part. The following solution is the one employed:

℞ Powdered picric acid, 75 grains;
Alcohol, 2 ounces;
Boiled or distilled water, 1 quart.

These applications are employed for three or four days, rigid antiseptic precautions being continued.

Even in severe burns two or three applications are quite sufficient to produce almost an entire cure.

SOME CLINICAL REMARKS ON PNEUMONIA.

In the London *Lancet* of April 4, 1896, SQUIRE discusses the course and diagnosis of pneumonia, and strongly advocates the stimulant plan of treatment. He thinks that we have in pneumonia an illness which is of short duration but often of great severity, and recovery is almost certain if we can keep up the patient's strength till the fever is past. As most of us know by experience, exhaustion may come on so rapidly that if we wait until it shows itself treatment may be too late to counteract it. We may, however, do much to prevent this excessive exhaustion by commencing with stimulant treatment from the first. By stimulant treatment the author does not mean necessarily or solely alcoholic treatment, though he considers alcohol one of our most important drugs in the treatment of pneumonia. A full supply of nourishment in suitable form is necessary, as well as stimulant drugs, and good nursing is essential. In many cases the nurse is what the practitioner makes her; and if the medical man shows a knowledge of what good nursing means, and gives minute instructions to the nurse, taking measures also to satisfy himself that his instructions are carried out, he will probably have little cause to complain of want of attention on the nurse's part. In severe cases the author is in the habit of writing out a time-table for the nurse, stating not only the hour at which nourishment, stimulant or medicine shall be given, but the nature and quantity of each to be administered on each occasion. He then expects the nurse to keep a diary which he may compare with his time-table at every visit. Whether it is ever allowable to cease giving a patient food, drink, or medicine, on the ground that it can do no good and only bothers the dying patient, we need not now discuss. It is certainly never justifiable in a case of pneumonia. He can recall two or three instances of recovery after the patient had been "given up," in which any relaxation of the details of nursing would have taken away the last hope. This point cannot be too strongly insisted upon.

Local applications over the affected portion of the lung are very useful. Whether they exert any appreciable influence on the disease may be questioned, but they often ease the patient's discomfort and soothe him. A poultice is generally most comfortable to the patient, but ice-bags are also recommended. The inhalation of oxygen is often of service, especially when a large extent of lung is consolidated; and he has seen marked improvement in breathing and in general symptoms from placing a patient with high fever in a tepid bath, after which the patient dropped off into a quiet sleep. As to the drugs, there is room for individual choice within a certain range, and symptoms will guide us in our selection. The writer prefers carbonate of ammonium, to which digitalis or strophanthus may be added if there is any danger of cardiac failure. A caution is to be observed as to the use of even simple aperients. Of course the patient must not be allowed to get up, and sudden danger may result from undue action of the bowels. An enema may be needed, and this means of giving both nutriment and alcoholic stimulant also must not be overlooked.

With regard to alcohol, he prefers to begin to use it early in small doses (two to four ounces in the twenty-four hours), and to increase the quantity on the first indication of increasing weakness. Many cases will complete their course without needing any increase of the initial amount, but he has known cases where the alcohol has had to be given in large amount for a day or two. Sometimes, in serious cases, he tells the nurse that if exhaustion is great an extra half-ounce of brandy should be given before calling the medical attendant. When he was a house physician, a patient under his charge with double pneumonia took about thirty ounces of brandy in one 24-hour period. The case was pronounced hopeless by the visiting physician, but the writer and the nurse decided that they would keep him alive over the crisis if it could be done by stimulant, and they succeeded. This experience coming so early in his medical career made a great impression on his mind. He believes there is no better stimulant for use in the exhaustion of pneumonia than alcohol; others prefer not to use alcohol at all, but if they are wise they make use of some other stimulant in such cases as the one just alluded to. As already intimated, the pneumonic patient will probably recover if you can keep him alive over the tenth day. The personal equation has such a marked influence on the character of the disease, that, though we may lay down some general principles for the treatment of pneumonia, we must be guided as to details by the individual peculiarities in each case.

IRON CACHETS FOR ANEMIA.

The following prescription is given by the *Journal des Praticiens* of March 28, 1896:

℞ Protoxalate of iron,
Powdered rhubarb, of each, 1 grain.

Make into a cachet. Give two or three of these cachets each day.

THE TREATMENT OF PNEUMONIA BY GUAIACOL.

We learn from the *Journal des Praticiens* of March 28, 1896, that MALDARESCO, of Bucharest, is in the habit of employing guaiacol in the treatment of pneumonia, and that he obtains very good results from its use. After the diagnosis of pneumonia has been made, guaiacol is applied to the posterior surface of the thorax corresponding to the part of the lung which is involved; within six or seven hours the temperature falls, and the applications are continued if necessary for three or four days until the case reaches a conclusion.

Maldaresco claims that after the application of the guaiacol the patient is free from fever for a long time, his cough diminishes, the tongue becomes more moist, the expectoration more readily performed, and the liquid which is brought up is more fluid. Should two or three applications of guaiacol irritate the skin, other portions of the chest-wall must be resorted to. Often it is advantageous to mix the guaiacol with oil of sweet almond in the proportion of four per cent.

Maldaresco treated during the years 1894 and 1895 one hundred and one cases of pneumonia. Out of this number he had eighty-three recoveries, in sixty-six men and seventeen women, and eighteen deaths, nine of which he does not think obtained the full benefit of the treatment, and three of which suffered from old cardiac lesions antedating the attack of pneumonia.

AN OINTMENT FOR RHEUMATIC JOINTS.

℞ Salicylic acid,
Oil of turpentine,
Lanolin, of each, 2½ drachms;
Lard, 3 ounces.

—*Journal des Praticiens*, March 28, 1896.

THE TREATMENT OF SCARLATINAL SORE THROAT.

The *Revue Internationale de Médecine et de Chirurgie* of March 25, 1896, tells us that LAPE, in an inaugural Paris thesis, highly recommends the use of the glycerole of resorcin in the treatment of the sore throat of scarlet fever associated with the formation of a pseudo-membranous exudate.

The solution which is employed consists of resorcin in glycerin in the strength of five to ten per cent., and the method is that used by Josias with great success.

The advantages are that it modifies in a favorable manner the condition of the mucous membrane, and diminishes the frequency of the secondary infections with enlargement of the cervical glands. The solution is employed in both severe and mild cases, in the latter as an abortive measure. It is applied by means of a camel-hair brush or a swab two to four times a day, according to the gravity of the condition of the throat. Before it is used the throat should be thoroughly washed by means of boric acid and water, and then the tonsils, the base of the tongue and the posterior pharyngeal wall should be thoroughly swabbed by means of a piece of absorbent cotton soaked in the solution. It is stated that the method is not painful, and that the resorcin in this strength does not exercise a caustic action.

THERAPEUTIC SUGGESTIONS IN THE TREATMENT OF GASTRIC DISEASES.

HERSHEY told his class at a recent lecture (which is reported in the *Gross Medical College Bulletin* for March, 1896) that no organ of the human anatomy is more often affected by some derangement of the nervous system, or more prone in its turn to seriously affect the system, than is the stomach. By a careful study of the pneumogastric nerve, its origin and distribution, we cannot help but recognize the intimate relationship existing between the stomach and the vital organs. Emotional excitement is second to no other cause that will readily affect the functions of the digestive organs, and according to the degree and continuance of this excitement will be the rapidity with which a perfect cycle of disturbances will be set up. One cannot continue long in the practice of medicine before he discovers the part that poorly digested food plays in all affections he meets, and how the poorly nourished system results in a low grade of the nervous system, brought about by an original over-excitation of the nerves.

The neuroses are unquestionably the forerunners of gastric disorders. Few diseases of this organ owe their origin to any other cause. To find a remedy to overcome these early manifestations of the disease, that will at once set at rest the irritability of the gastric mucous membrane and tone down the over-excited nervous conditions and prevent many of the diseases that follow, is an ambition that is certainly worthy of our best efforts; but fortunately we have a remedy that will fulfill these requirements—a remedy which, if properly handled, will soon establish its reputation among those who are able to differentiate the neuroses from those affections which have become chronic through impairment of the gastric functions extending over a period of years. Even in that most annoying reflex disturbance of the stomach, the vomiting of pregnancy, this remedy should be, and from frequent trials has proven itself to be, of unquestionable service.

This remedy is the bromide of strontium. Given in from twenty- to thirty-grain doses at meal-times, there is no disorder of the stomach due to a nervous origin that it will not benefit, and few that it will not cure. Its benefit comes at once, and its action is accompanied by no disagreeable symptoms.

Before continuing with the therapeutics of the stomach, it may be well to eliminate one popular drug—namely, pepsin—which is usually a combination of peptone and desiccated mucus and albumen, and probably never anything else. It should not be classified as a remedy. Its odor shows its character. It is a filthy product, derived from maceration of the mucous membrane of the hog. That it aids digestion in the stomach, is but a supposition, not borne out by facts, and recent investigation has shown that most of the abnormal fermentative changes that go on in the stomach are due to too much pepsin, the action of which is retarded by the absence of other necessary constituents of the gastric juice, among which is free hydrochloric acid.

There is no form of dyspepsia so common as that due to the absence of hydrochloric acid, and none so readily relieved when the deficiency is supplied. The great difficulty in the past has been due to the small amounts which have been administered. When the absence or decided diminution of this acid has been ascertained by the proper chemical tests, the drug should be given in large

quantities and repeated several times after each meal. One drachm of the official diluted hydrochloric acid is in many cases not too much, providing it be divided into four doses given every half-hour, commencing immediately after the ingestion of food. Whenever it has been ascertained that intestinal indigestion is associated with the same conditions of the stomach, nitro-muriatic acid is indicated, a remedy that long since would have been in great favor had it been properly administered; but nitro-muriatic acid that is not freshly prepared from the two acids which compose it is not only inert, but irritant to the mucous membrane.

Dr. Hershey further stated that in the treatment of advanced catarrhal conditions of the gastric mucous membrane, where the stomach-tube cannot be used, no remedy suggests itself as being comparable to the bichromate of potassium. This drug in its application to this disease is as decided in its curative effects as is the nitrate of silver in the treatment of gastric ulcer. Given in $\frac{1}{5}$-grain doses, well diluted, and where the stomach contains no food, the action of this drug is usually very gratifying to the patient and physician. The only difficulty lies in the uncertainty of the quantity to be given: the dose of one-fifth of a grain has caused irritation of the gastric and intestinal mucous membrane, but this amount may be considered the minimum in the vast majority of cases. As high as three-fourths of a grain, well diluted, has been given without producing any bad effects.

The subnitrate, subcarbonate and subgallate of bismuth have long been the standard remedies for the treatment of catarrhal conditions of the stomach, but their action is better in acute catarrhal conditions, and so little has been accomplished with them in chronic gastritis that it would be far better to limit their use to the acute cases.

Atonic dyspepsia is an affection often met with, usually the result of a run-down system; the pale, flabby tongue is always indicative of anemia, and the accompanying gastric disturbance is actually due to the small amount of blood received by the stomach.

First of all the physician should pay attention to the general system; then, should there be an atonic condition of the stomach, nux vomica, combined with hydrochloric acid, will yield good results if given before meals in doses of five to ten minims of each. Paramount, in the treatment of any gastric disorder, is the regulation of the diet. You cannot expect any good results from the drugs recommended so long as improper food-stuffs are taken into the stomach to act as a disturbing element. It is astonishing how rapidly pathological changes in the gastric mucous membrane will be overcome, simply by a well timed defense against certain kinds of food that have been previously indulged in, and how rapidly the symptoms due to neuroses will disappear when a change of scene and mode of living has been insisted upon.

The alarming rapidity with which the average brain-workers consume their meals, demanding of the stomach rapidity in secreting that must sooner or later overwork the secreting tubules, should receive the attention of those who marvel at the increase of gastric disorders among us. Preventive medicine has, during the past few decades, made rapid progress, but it seems as though this organ is still abused, regardless of the distressing consequences that follow.

Upon a healthy condition of the stomach depends the purity of the blood, the creator of tissue, the channel of elimination by which the body rids itself of poisonous products that crowd themselves into the system, no matter what care may be taken for their prevention.

CONCERNING THE EXTRACTION OF IMMATURE CATARACT, WITH THE REPORT OF CASES.

In the *Polyclinic* of April 18, 1896, De Schweinitz states that practically all ophthalmic surgeons are agreed that about the sixtieth year the lens may be extracted safely, even if it is in part unclouded, because, if Schweigger is correct, at that period of life the usual criteria of ripeness are erroneous, accommodation being annulled by physiological changes in the lens. Whether we may with equal propriety extract immature cataract in younger individuals, is still a matter of dispute, and it is much to be desired that some rational and safe procedure may be devised to relieve the patient from the long period of semi-blindness which often exists while a senile cataract is slowly advancing to maturity. Not only is this stage present in senile cataracts, but also in other types of opacification of the crystalline lens—namely, zonular cataracts, immature traumatic cataracts, and the partially formed cataracts in young people.

Recently this subject has been discussed at

some length by Dr. John E. Weeks in a paper entitled "The Operative Treatment of Immature and Some Forms of Zonular Cataract," which was presented to the Baltimore meeting of the Ophthalmological Section of the American Medical Association. Twenty-five cases, without a failure, were reported, and the results appeared to this writer to be as favorable as those ordinarily obtained by the removal of cataract at the stage of maturity.

It is interesting to note one or two of the comments on this paper. Knapp, for example, refers to the fact that the ripening operation unfortunately is often done without effect, often provokes iritis, and has even been followed by plastic and purulent iridocyclitis. He, therefore, if patients will not wait, prefers the risk of dealing with the remnants by secondary discission to the double operation of ripening and extracting the lens. Hotz, of Chicago, describes his experiences with ripening processes as unsatisfactory, either because the lens did not ripen, or because his efforts were followed by cyclitic irritation, and concludes that the extraction of immature cataract does not involve greater danger than the removal of a fully mature cataract, provided there is not a very large amount of absolutely transparent lens matter; and when there is, the patient's vision is usually still so good that operation is not urgently demanded. Not a little interesting are the remarks of Dr. White, of Richmond, who, as we all know, is a strong advocate of one form of ripening operation. He says: "I never ripen immature cataract if the case will wait for nature's processes, and then only if the patient is under sixty years of life; over sixty years of age, I extract without waiting for maturity."

First, concerning the ripening of cataracts: The writer introduces this subject in the hope that it may elicit discussion from his colleagues, and not in any sense to bring forward new views or new methods. His own experience with ripening consists in the performance of one of two operations: either the Foerster method, or, in a few instances, the method which is particularly advocated by Borne Bettmann, of Chicago, namely, direct massage of the lens capsule. He has not performed either of the operations many times, and thus far has not had any bad result; perhaps this is due to a limited experience. He has, however, seen extremely bad results in the hands of others, not only from primarily induced iritic and cylitic complications, but also where the ripening process proceeded smoothly, but at the extraction the capsule was found thickened, the cortex clinging tenaciously, and the toilet of the wound much more difficult than would have been the case had the cataract been extracted in its immaturity.

Second, concerning the method of extracting an unripe cataract: Knapp, Weeks, and other operators of skill and experience, employ the simple extraction, precisely as they would for an uncomplicated mature cataract. In all his cases of unripe cataract he has used the combined method, sometimes with a preliminary iridectomy, with the exception of one instance, in which he did simple extraction. He prefers iridectomy because it has seemed to him that prolapse of the iris, from the danger of which the best operator is not free, added to the increased danger of cortical remnants, multiplies unnecessarily the risks of the patient, and moreover, that the toilet of the wound was more easily accomplished. Perhaps with wider experience and increased skill his opinion on this subject may change. Certainly the experience of Weeks indicates that simple extraction is satisfactory.

Third, concerning the opening of the capsule: Theoretically, peripheral opening of the capsule, and therefore confining cortical remnants, is the proper procedure. Practically, with the exception of one case, he has always freely opened the capsule by a T-shaped flap, and usually, immediately at the conclusion of the operation, has instilled a drop of sterilized atropine solution. He has avoided iritis, except in one instance; in this case, however, there was trauma during the process of healing.

Fourth, concerning irrigation of the anterior chamber: He believes this to be a dangerous procedure, and never employs it. Occasionally, in clearing the wound, he has made slight pressure on the sclera above the corneal section with a sterile spatula, and allowed his assistant to flood the wound-edges with a tepid boric-acid solution or a sterile normal salt solution, but he has never, in recent times, injected these fluids into the chamber. Surgeons with large operative experience report most satisfactory results from irrigation of the anterior chamber, particularly Lippincott, of Pittsburg, who practices irrigation as a routine matter; but the author is not inclined to burden the extraction of cataract with an additional manipulation when equally good results are obtainable without its use.

If De Schweinitz were to sum up his belief

in regard to the extraction of immature cataract, he would say with Knapp, with White, and probably with all surgeons, that he prefers always to wait for maturity, or for that time of life when the lens, even though immature in the ordinary sense of the term, will cleanly leave its capsule. But he prefers the extraction of immature cataract (combined section) to the performance of an operation for ripening. He performs preliminary iridectomy if functional examination determines that there are complicating circumstances, as, for example, in the cases of high myopia, and in two of his cases of immature nuclear cataract in which the tension of the eyeball was diminished and there was tremulousness of the iris, indicating probable vitreous changes.

THE TREATMENT OF ENTERO-COLITIS.

In the West London *Medical Journal* for April, 1896, CLEMOW states that, apart from the adoption of general hygienic measures as regards fresh air, ventilation, bathing or sponging, warmth to the abdomen and lower extremities, etc., the main indications for treatment are: first, to evacuate the fermenting masses from the stomach and intestines; secondly, to combat the process of decomposition by appropriate drugs; thirdly, to administer such food to the child as shall be best calculated to sustain its strength, and of such a nature as to minimize the introduction of fresh micro-organisms into the digestive tract, and least favorable, therefore, to a furtherance of the processes of decomposition; and fourthly, to treat symptoms and complications as they may arise.

To clear the intestines of their fermenting contents, we can employ nothing better than a dose of either calomel or castor oil. The former combines with its purgative action a very powerful antiseptic influence, while the latter equally effects a complete evacuation of the intestines, and would appear to have some slightly constipating after-action, which may be advantageous. This simple measure will undoubtedly bring to a rapid and successful termination very many cases which, if neglected, would certainly go on to a much more pronounced and obstinate form of the disease.

But intestinal cleaning-up is not always sufficient. Dietetic treatment then becomes of the first importance, and it need scarcely be added that in order to intelligently watch the effect of this and of whatever medicinal measures we may employ, it is necessary to inspect every motion that is passed. If milk appears undigested in the stools (as in all probability it will), it is an indication to stop its administration at once. Whey may be advantageously substituted, and may be given either together or alternately with small quantities of raw beef juice, or some reliable essence of beef or chicken diluted to form a weak broth. Stimulants are almost always necessary, and of these old brandy is the best. Occasionally it may be required in large quantities. As improvement in the character of the motions and in the general condition takes place, the amount of stimulant should of course be gradually diminished, and peptonized milk should be gradually substituted for the whey. If this appears to agree, and is shown by the character of the motions to be well digested, it may soon be partially and later wholly replaced by sterilized milk. This can be most easily prepared by placing the milk in clean screw-stoppered bottles in a saucepan of water, which is allowed to boil for forty minutes. The milk never comes quite to the boil, but is nevertheless completely sterilized. The stoppers should be put for a few minutes at any rate into the boiling water, and inserted into the bottles when the saucepan is removed from the fire. Thus prepared, the milk is much more palatable than when boiled in the ordinary way, and, the curd being separated, according to M. Budin, into minute particles or flocculi, it is readily digested.

A very useful and nutritious adjunct to this dietary is bread jelly. This has the advantage of being very cheaply and easily prepared, and may be added to the whey or peptonized or sterilized milk in the proportion of a tablespoonful to eight ounces, thus making a food of the consistence of thin cream. Sweetened with a little white sugar, this is a very palatable mixture.

Cream in small quantities mixed with the food is generally well tolerated in these cases, and where whey is used as a substitute for the milk it supplies a certain amount of fatty material in which such a dietary is otherwise deficient.

As regards medicinal treatment, the writer is strongly of the opinion that those drugs which exercise an antiseptic and antifermentative influence are by far the most efficacious. As his experience in the treatment of entero-colitis increases, so does his faith in the value of astringents pure and simple, and of opiates, diminish. The former, speaking generally, are of but little value so far as the cause

of the disease is concerned, while the latter, except in the smallest doses, and in cases where the number of stools is excessive, simply serve to disguise symptoms and cause a retention of decomposing material which it is most desirable should be got rid of from the intestines.

Of antiseptic drugs there are now a large number in use, and their employment and mode of action have been ably dealt with by Dr. Soltau Fenwick in a paper in the *British Medical Journal* of December 21. The writer makes no attempt to deal with them all, but confines his remarks principally to those which he has personally found useful in practice.

Of one thing he is sure: no one drug will prove universally efficacious. What succeeds in one case may in another appear to have no influence whatever. Bismuth he believes to be on the whole one of the most trustworthy of our remedies, and the form in which he has employed it has been the subnitrate. In the intestines, as shown by Drs. Surveyor and Vaughan Harley, this is decomposed into the black sulphide, nitric acid being set free. In order to obtain satisfactory results, large doses are necessary, and the writer generally gives twenty to thirty grains every four hours to children between one and two years of age. He has certainly never seen any harmful results from these apparently large doses, but has frequently seen great good.

Sometimes he has combined salol with the bismuth, but he is not certainly prepared to say that the patient would not have done as well with the bismuth alone. But he has also seen bismuth fail completely, both when administered alone and in combination with solution of perchloride of mercury, and with salol. This happened in a case recently under the writer's care, and here the most gratifying results followed the administration of calomel in fractional doses, one-twelfth grain being given every hour for twelve hours, then every alternate hour for another twelve hours, and afterwards every third and fourth hour for similar periods. The stools very rapidly lost their offensiveness and assumed a much more natural consistence. Subsequent administration of bismuth, with small doses of rhubarb and soda, effected a cure.

Gray powder in small and frequently repeated doses he has also found very useful. Beta-naphthol is certainly a powerful and satisfactory intestinal disinfectant in adults, but on account of its disagreeable odor he has not employed it in the case of children. Neither has he had any experience of resorcin, which is so highly spoken of by Dr. Fenwick, and which, in consequence, he certainly intends to give a trial.

He thinks intestinal irrigation has not received the attention it deserves in England. The method, as he employs it, has been as follows: The child is placed on its back across the bed, with its knees well separated, and the pelvis elevated upon towels on a small pillow, everything being covered with a mackintosh sheet, and plenty of old soft bath-towels being at hand to soak up the fluid as it returns from the intestine. If the patient is sufficiently old to be made to understand, and to be kept quiet, no anesthetic is necessary, but in the case of a very young child anesthesia facilitates the operation. Deep anesthesia is neither necessary nor desirable, since it has seemed that the influx of fluid upon the abdominal sympathetic nerve has at times a somewhat depressing influence upon the heart's action. To the tube of a quart douche he attaches a large-sized red rubber catheter, which he marks with an anilin pencil about six or seven inches above the eye. Upon the rubber tube, a little distance above its junction with the catheter, he places a clamp so that he can arrest the flow of water into the intestine at any moment that he thinks necessary. The can is filled with water to which two drachms of borax or a small quantity of boroglyceride has been added. The temperature of the water is a matter of some little importance. He should certainly hesitate to employ the iced water which has been recommended by some. The operation itself involves some exposure and consequent loss of heat to the child; and it appears to the writer that to inject into the intestine large quantities of iced fluid would in all probability give rise to a considerable amount of shock and to a dangerous and unnecessary lowering of temperature. The writer's practice has been that in the can the thermometer should show about 100° to 102° F. Roughly speaking, by the time the fluid reached the intestine its temperature would be somewhere about that of the body, or a trifle lower.

Having well lubricated the catheter as far as the anilin mark, it is inserted into the anus, and as soon as a couple of inches have been introduced the can is raised and the fluid allowed to flow, and as the intestine is gradually distended the catheter is pushed on until the anilin mark is reached. The fluid

continues to enter until either intestinal peristalsis, or the child's straining, or both combined, commence to effect its expulsion, which takes place along the sides of the catheter. The can is at once lowered, and not raised again until the expulsive efforts have ceased. This procedure is repeated several times, and thus the whole colon, as far, probably, as the ileo-cecal valve, is completely washed out. The water, as it returns at first, is usually intensely fetid and disagreeable, and brings with it much mucus and fragments of fecal matter. This gradually improves, until at last it may be returned almost odorless and clear.

In the cases in which he has used this method, the effect upon the child has been most gratifying. After all the remaining fluid has been expelled from the intestine, a very much longer interval has elapsed before the bowels have acted again, and subsequent motions have been far less foul-smelling and accompanied by much less mucus. The patient has passed into a quiet slumber soon after the operation, and has appeared to be much less restless. It may be necessary to repeat the procedure once in twenty-four hours for a few days.

THE USES OF CODEINE SULPHATE.

This valuable drug, though appreciated by many, is yet incompletely understood by perhaps the great majority of the profession, according to the *Maryland Medical Journal* of April 18, 1896. Overshadowed by that other alkaloid of opium, its big brother, so to speak, morphine, little codeine has yet a number of rare virtues which entitle it to consideration. Like morphine, it is trustworthy. In its sphere it can be relied upon to produce its usual effects. In this, being an alkaloid, it has the advantage of most of the vegetable sedatives which contain an unknown and variable quantity of active ingredients. It does not, like morphine, disorder the digestive functions and produce constipation; nor does it, like morphine, so enslave the will or lose its effect that increasing and more frequent doses are demanded.

Codeine produces most excellent results in irritating coughs. The consumptive, sleepless from cough, finds that from one-half to one grain at bedtime in pill secures him sleep, or at least pleasant rest. The pneumonic patient, sore from thoracic neuralgia and from cough-jarring, is relieved by the addition of a quarter-grain to his cough medicine. The pelvic martyr finds in it a harmless sedative for her milder womb-aches. In nausea from stomach nervousness it often gives permanent relief. The diarrhea and belly-ache (old Saxon term) which sometimes follow immediately after meals in dyspeptics, are heard from no more when a half-grain codeine pill is ordered ten minutes before eating. Finally, it is more and more used as an agent to "let down easily" the opium-eater who is trying to break the habit.

The drug should be bought of a first-class firm if good effects are desired. Manufactured pills should be gelatin-coated, made to order; aromatic sulphuric acid, q. s., should always be added. For coughs it goes well in syrups with the carbonate of ammonia. The sulphate of codeine is preferable to the alkaloid codeine.

EXOPHTHALMIC GOITRE.

STARR, of New York, contributes a masterly summary of this subject to the *Medical News* of April 18, 1896. He thinks, in respect to treatment, that if exophthalmic goitre is due to an excessive secretion of thyroid juice, it is necessary for us to bring into accord with this idea some of the successful results of the various forms of treatment which have been recommended for this disease. It is well known that a very large proportion of patients who suffer from exophthalmic goitre recover either entirely, or for a considerable length of time. Such a recovery is of course inconsistent with the idea of a permanent destructive lesion of any organ of the body, and is only possible in a functional disturbance. If the cause of the disease is hypersecretion by the thyroid gland, a reduction of that secretion to its normal amount would result in a cure; hence there is nothing in the theory advanced that is against this successful result. But when the enormous number of remedies which have been brought forward are reviewed, it is not easy to understand in what way the result in any individual case has been accomplished.

If we review the various methods of treatment which have been proposed, it is perhaps possible to explain the success obtained on the theory that these various remedies have in some manner effected a diminution in the activity of the thyroid gland. Thus the remedy most employed in England is belladonna, and it is not improbable that this has a specific action upon the thyroid gland, as

it has upon other glands of the body, in arresting its secretion. The writer reports a recent case, a girl aged seventeen, with all the characteristic symptoms present one year, who has been very greatly improved in two months by doses of belladonna carried to the physiological limit.

The rest cure is probably the most successful of all the methods employed in the treatment of exophthalmic goitre, and this, together with the use of iron and tonics, accomplishes the purpose by quieting the general nervous irritability. And this leads us to refer to the very marked effect of the mental condition upon the symptoms of exophthalmic goitre. We know from daily experience that the mind has a distinct action upon the various glands of the body: thus the secretion of tears is almost entirely produced by mental impressions; the secretion of saliva is also markedly stimulated by sensory impressions; the secretion of gastric juice and the whole process of digestion are decidedly affected by mental conditions, as is markedly evidenced in the malnutrition and malassimilation present in cerebral neurasthenia and in the various forms of insanity. We have presumptive evidence, therefore, that the mental condition may affect the secretion of the thyroid gland, and there is an overwhelming amount of testimony to the effect that the onset of exophthalmic goitre can be traced to mental emotion, especially of the nature of fright, dread, and anxiety. It is impossible, therefore, to ignore the mutual relation between a restful state of the mind, without anxiety, and a diminution of, or more natural, secretion in the glands of the body. Hence it seems probable that the success of the rest cure in these cases is due to the little understood, but powerful, effect of the mental state upon bodily functions.

Electricity is an agent which has been greatly vaunted in the treatment of exophthalmic goitre. Inasmuch as various methods of its application have met with success in certain hands and the same methods have utterly failed in others, it is difficult to determine the real value of this therapeutic agent. It is possible that it may act through the mind by suggestion. It is also possible that it may have a distinct influence upon the secretion of the gland, either by a catalytic action of the galvanic current or by a compression of the gland exerted through the muscles, which are excited by the strong faradic current.

Dr. Rockwell, whose experience is probably greater than that of any one else in New York in the electrical treatment of this disease, states that his greatest successes were obtained by means of very strong galvanic currents (60 milliampères), applied through a clay electrode directly to the gland. Such a current would undoubtedly result in chemical changes within the gland, modifying its secretion. Dr. Putnam, of Boston, favors strong faradic currents causing contraction of the muscles of the neck and compression of the gland.

It is somewhat difficult to explain the favorable action secured by aconite and veratrum viride, although the testimony in favor of these drugs is too definite to be ignored. They are both known to have a distinct action in modifying the secretion of the glands of the body. It is also possible that by their depressant influence upon the heart they have reduced materially the flow of blood through the thyroid gland, which, being near the heart, would manifestly be affected by the force of the latter's activity.

If ergot contracts the medium-sized arteries, its favorable action may be ascribed to diminution in the blood-supply of the gland.

It is thus evident that the effect of remedies which have been urged in this disease can plausibly be explained by their known effects in diminishing secretion produced within the body.

Starr mentions one remedy which in several cases has seemed to be of great service, namely, the glycero-phosphate of sodium, in twenty-grain doses, three or four times a day. This was first used by Trachewsky in Kocher's clinic, and was found to have the effect of diminishing the size of enlarged thyroid glands. It has also been successful in the hands of Chibret. Under treatment by this drug alone, a patient in the Presbyterian Hospital was markedly benefited within three weeks. A second patient, to whom various forms of treatment were given by Starr for one and a half years, appreciated within two weeks the fact that this remedy had been of more decided benefit in every direction than any other which had been used in the previous period.

It is well known that within the last few months attempts have been made to treat patients suffering from exophthalmic goitre by means of the administration of thyroid extract. This has been done in a purely empirical way. The consensus of opinion, however, seems to be that the thyroid treat-

ment for exophthalmic goitre is not only of no service, but actually of great injury to the patients. Numerous reports have appeared in all parts of the world to the effect that patients suffering from exophthalmic goitre have had all their symptoms markedly increased by the use of thyroid extract. Thus, in a patient of Auld the symptoms of the disease which had previously subsided were all brought back by the administration of this extract. In patients of Nasse and Brissac, Béclère and Stabel, the symptoms present became very much exaggerated, but subsided when the thyroid was stopped, and in one unfortunate case on record a fatal result appears to have followed soon after the use of the thyroid.

If the theory of the disease here defended is correct—if exophthalmic goitre is due to an excess of thyroid secretion—there is every reason why the administration of thyroid should be avoided.

It may be affirmed, however, that if there is a well authenticated case on record of improvement of the disease under the administration of thyroid extract, it would entirely overthrow the theory here defended. Starr does not think that the cases of supposed improvement, of which a few have been reported, will bear thorough and critical examination. It is well known that the symptoms of tachycardia, exophthalmos and general nervousness have been occasionally associated with tumors in the neck, near to but not involving the thyroid gland. In fact, Buschan has attempted to draw a sharp line between primary and secondary cases of exophthalmic goitre, the latter consisting of two or more of the symptoms of the disease coexisting with other diseases of the thyroid gland. It cannot be denied that such a distinction appears to be valid. And admitting the fact that in ordinary goitre, in which the secretion of the thyroid is arrested or perverted by the existence of the tumor, beneficial results have followed the use of thyroid extract, as reported by Bruns, it seems possible to explain these cases of beneficial use of the drug on the theory that the patients were really suffering from a secondary form of exophthalmic goitre.

Another fact must be mentioned in this connection, namely, that there are some statements in favor of the use of thymus extract in the treatment of exophthalmic goitre. The origin of this treatment was as follows: Owen reported a case of exophthalmic goitre cured by the use of thyroid glands given in bulk. Some months after, he published a correction of this statement, having ascertained that the patient had been fed upon thymus gland exclusively and had never received any thyroid gland. He ascribed the improvement, therefore, to the thymus; and, following in his steps, others have tried the use of thymus in exophthalmic goitre. Watson Williams reports a case very carefully observed, in a hospital, in which this treatment, like that by thyroid extract, was of positive harm to the patient.

We know at present very little regarding the thymus gland or its use. It is a structure which is known to atrophy soon after infancy, and it appears to be rudimentary in the majority of adults. There are a few observations which lend support to the statement that in exophthalmic goitre it has been found increased in size after death. Such increase in glandular structure, however, associated with exophthalmic goitre, is not unknown. Thus Bowman records a case in which the lacrymal and parotid glands were much enlarged; and Higgins records a case in which all the lymphatic glands within the thorax were much developed; and a case is also on record of a man whose mammary glands were as much enlarged and as tender as those of a woman in the later stages of pregnancy—this glandular enlargement subsided soon after the extirpation of the thyroid gland, which relieved the other symptoms of exophthalmic goitre in his case.

With our present knowledge it cannot be stated whether enlargement of the thymus, if it occurs in exophthalmic goitre, is merely an homologous hypertrophy or a compensatory hypertrophy. In the former case it would be analogous to the enlargement of the thyroid gland, under which circumstances the administration of thymus would be distinctly contra-indicated. In the latter case it might be regarded as an effort of nature to combat the influence produced by the increase of thyroid secretion, and in this case the administration of thymus would be distinctly indicated. Until further facts are at hand with regard to the function of this gland, or with regard to its effects in exophthalmic goitre, we cannot reach a decision as to its use. It is always to be remembered that reports of benefit attained by the use of a remedy are more likely to be published than those of failures, and the testimony in favor of the use of thymus must be much more voluminous and uniform than at present before its trial can be advised by the writer.

If the conclusion thus reached is valid, that exophthalmic goitre is due to an excessive secretion of the thyroid gland, the most rational form of treatment for the disease would appear to be the removal of the gland. Yet surgical treatment is not to be undertaken rashly in this disease. We have seen already that there is a very decided tendency to recovery, either spontaneously or under the influence of treatment, and therefore it is only in the most obstinate cases of very severe type, or in the cases where life is endangered by the sudden swelling of the neck to the extent of producing asphyxia, that the question of operation is to be seriously considered. There are, however, many cases which, after a longer or shorter period, develop such serious symptoms and remain unrelieved so long by medical treatment that the question of operation must be faced. It is therefore necessary to review such facts as can be gathered regarding the result of surgical treatment in exophthalmic goitre.

In December, 1893, Putnam collected fifty-one cases of exophthalmic goitre which had been operated upon. In December, 1894, Buschan was able to collect ninety-eight cases of operation. The writer has been able to find ninety-two additional cases in the literature of 1895, and especially in the American journals, bringing the total number of cases operated upon up to 190. Of this number, twenty-three died immediately after the operation; seventy-four are reported as entirely cured; forty-five are reported as improved; and three are reported as not improved; in regard to the remainder no final results are reported. The occurrence of sudden death immediately after the operation, or within two or three days of it, is a fact of very serious import. Death after these operations is not owing to hemorrhage or to any want of aseptic precautions; in all cases reported there have been a sudden rise of temperature to 105°, 106°, or 107°, a very rapid pulse (180 to 200), extreme nervous excitability and restlessness, with great anxiety and distress, profuse sweating, and, finally, collapse and death from heart failure. The most reasonable explanation for this series of symptoms is a sudden poisoning of the entire system by an excessive absorption of thyroid juice suddenly produced during the operation. This may perhaps be induced by the necessary handling of the gland during the operation, or by the absorption of its secretions through the open blood-vessels which have been torn or divided, or from a hypersecretion of the gland with a consequent absorption going on during the operation, possibly from the effects of ether, well known to be a dangerous anesthetic in exophthalmic goitre. The theory of an increased secretion of the gland is supported by the fact that in the operation advised by Jaboulay, and named by him exo-thyro-pexy (in which the tissues on the neck are divided, and the gland brought forward and left exposed to the air, but not divided or removed), it has always been noticed that a large amount of thyroid secretion exuded from the surface of the gland into the dressings. Had this extraordinary secretion been absorbed into the blood, it would undoubtedly have produced poisonous effects. That manipulations of the gland of any kind are liable to produce an increase in nervous excitability and in the rapidity of the pulse, is a fact of which every patient suffering from exophthalmic goitre is aware; hence they uniformly shrink from anything compressing the neck or from any attempt to handle the goitre. Such handling and pressure is usually inevitable during the operation, and seems to be the natural explanation for the occurrence of poisoning following the operation. It may not, however, be the only explanation, for in three cases of which the writer has knowledge sudden death has followed when the goitre removed was an extremely small one. He cannot, therefore, but believe that it is possible that the secretion of the gland is stimulated by the inhalation of an anesthetic, or by the anxiety preceding the operation, and he therefore thinks the operation should be done, if possible, under cocaine rather than ether, as recommended by Kocher.

It is the fact of these sudden deaths, occurring during or after operation, which has prevented a more extensive adoption of this form of treatment in this disease, and it is because such deaths have been inexplicable that they have been so freely and fully reported. Hence Starr believes that the statistics already given are fairly reliable, although it may be that the proportion of deaths (twelve per cent.) is somewhat in excess of the truth.

It will be noticed that seventy-four cases are reported as cured. Many of these cases were watched two, three, or four years before the favorable reports were made, during which time the cure was permanent. Hence the charge cannot be made that the reports have been published too soon after the oper-

ation to determine its ultimate effects. As a rule, the cures have not resulted immediately after the operation. There has been a steady progressive improvement during two, three, or four months, until finally the cure has been reached. The first symptom to improve is the tachycardia. In one case the pulse diminished during the operation from 120 to 80, and remained constantly below 100 after the operation. In the majority of cases the pulse has been notably slowed within twenty-four hours of the operation. The second set of symptoms to subside subsequent to operation are the nervous excitability and restlessness, and the tremor. These symptoms are so distressing to the patients that the relief which they obtain in getting rid of them in almost every case leads to a feeling of great gratitude that the operation has been performed. A number of patients whom the writer has examined subsequent to the operation, through the kindness of Dr. Curtis and Dr. Markoe, have expressed themselves as feeling very much better, even before the exophthalmos had been at all noticeably decreased.

Together with the subsidence of the nervous symptoms, there is a gradual diminution in the sense of heat and in the perspiration and the feeling of giving way of the limbs, and the uncertainty in gait soon disappears.

The exophthalmos persists longer than any other symptom. Some cases are reported in which it has persisted for a year after the operation, though in almost all cases it has noticeably diminished. It finally passes away. It must be admitted that there is no reasonable explanation for the existence of exophthalmos on any of the known theories of Graves's disease. The cases which have been reported here as cured are cases in which all of the symptoms have actually subsided.

There are forty-five cases that are reported as improved. In these cases it is the exophthalmos which has remained, or the liability to a rapid action of the heart, with nervousness, on any exertion.

It may be said in conclusion that in the severe and intractable cases of exophthalmic goitre, in which rest-cure and medicinal treatment have failed to relieve, the operation of extirpation of the thyroid gland must be considered as justifiable, and should be advocated by physicians. It should not be undertaken by surgeons hastily or without some experience. The surgeons who have been most successful in the past few years are those who have had the largest experience in the extirpation of goitres. The respective merits of the various operations proposed cannot be discussed in this place. Some surgeons prefer an almost complete extirpation of the gland, though it is always to be remembered that a small portion must be allowed to remain, else the patient will develop symptoms of myxedema.

Some surgeons prefer the operation of tying three or four of the arteries entering the gland, although this operation is almost as difficult as that of extirpation, and is not by any means uniformly successful, the number of new vessels entering the gland being so great as to keep up its size and nutrition even after the main vessels have been tied. Others prefer the operation of Jaboulay, of exothyropexy, in which the gland is exposed, drawn forward into an open wound, and then allowed gradually to contract and dry up. This is not always successful, and leaves a very ugly scar in the neck. It is, however, safer than either of the other operations, Jaboulay having reported fourteen cases successfully treated.

CALOMEL AS A SPECIFIC IN DIPHTHERIA.

The *Medical News* of April 25, 1896, contains a brief note on this topic by Dr. Flick, of Philadelphia. He says that mercury, among drugs, has held for years the first place in the treatment of diphtheria. Old-time practitioners were loud in their praises of the yellow sulphate of mercury in the treatment of croup. In more modern times most excellent results have been reported from the use of corrosive sublimate, and in the hands of some this preparation has given almost specific results. The fear of using large doses of corrosive sublimate—and large doses have been insisted upon by those who have reported success with the treatment—has no doubt stood in the way of a general adoption of this plan of treatment. At any rate, the mortality from diphtheria has so persistently kept up under drug treatment that antitoxin has been welcomed as a substitute for all drugs in our contest with this disease. Yet it may not be out of place to call attention to such drugs as can be advantageously and safely employed, if not alone, at least with antitoxin, for there remains yet a large mortality to overcome in diphtheria, in spite of the good results from the serum therapy.

Ever since the modern views about the use of mercury in diphtheria have been advanced, the writer has used the drug constantly, in some form, in the treatment of this disease. He has usually obtained good results, but also has had failures. Somehow, he has gradually drifted toward the use of calomel, and has come to employ it with rather surprising results. The method which he now follows entirely and with a certain precision, is to give calomel in very minute doses at short intervals. He administers from $\frac{1}{120}$ to $\frac{1}{60}$ grain of calomel, rubbed up with sugar of milk, every fifteen minutes to every half-hour, dry on the tongue. This constitutes an easy and pleasant method of administration. The treatment is kept up day and night until all evidences of the disease have disappeared. The result in his hands has been so magical that he has been skeptical many times about the diagnosis, but since he has adopted this method, now nearly two years ago, he has not had a death from the disease, nor indeed a serious complication. He fully appreciates the fact, in connection with this statement, that his experience may mean very little, as he has not seen a very large number of cases—he has not had many opportunities to determine whether or not the method is worthy of recognition. He therefore makes this report in the hope that the calomel treatment will be tried cautiously, and condemned if found wanting.

PUERPERAL ECLAMPSIA.

JONES, of New York, in a rather exhaustive article in the *New York Medical Record* of April 25, 1896, says blood-letting in eclampsia has very few advocates to-day, save as a measure to be appealed to in exceptional cases, to relieve œdema pulmonum or to avert a threatened apoplexy.

Playfair, Ahlfeld and Kaltenbach make about the same statements regarding bleeding, namely, that it may be beneficial in exceptional cases. In fact, there is only now and then an endorsement of this procedure, based upon a limited experience. It is quite possible that the advocates of blood-letting are ignorant of the fact that the great majority of women who suffer from puerperal eclampsia should get well under rational and conservative treatment. Many who appeal to radical measures in this disease before having exhausted less heroic ones, do so with an exaggerated idea of its actual normal mortality.

Chloral and chloroform are admitted by all to be of great benefit in the treatment of eclampsia, but the danger of using chloroform in any but a careful manner has been pointed out by Kaltenbach, Ahlfeld, Dührssen, and Runge, as tending to promote a rapid fatty degeneration of the heart.

Pilocarpine has been abandoned by all as tending to produce edema of the lungs and other internal effusions. Clarke, of Oswego, and G. Veit, of Bonn, advocated large doses of morphine administered hypodermically, as much as a grain being recommended to be used for one injection, to be repeated as required. This recommendation is in line with that by Loomis in 1873, that uremic convulsions should be treated by morphine hypodermically administered. Used in more moderate doses than those recommended by Clarke and Veit, and especially combined with veratrum viride, it has many advocates.

We come now to the consideration of the treatment of eclampsia by veratrum viride. In the July, 1859, number of the *Southern Medical and Surgical Journal*, Dr. Baker, of Eufaula, Ala., strongly advocated the use of this drug in puerperal convulsions, and reported one case of his own and several from the practice of colleagues in which it had been used with prompt success.

Norwood's tincture was used, first in doses of fifteen drops, followed by doses of ten drops every two hours as long as required, the aim being to reduce the pulse in frequency to 50 or 60 a minute and to diminish arterial pressure. Dr. Baker especially noted the tolerance to large doses exhibited by patients suffering from eclampsia, and the consequent absence of dangerous symptoms, unless the *very* large doses originally recommended by Norwood had been used; still he recommended that the initial dose of ten to fifteen drops should be followed by frequent doses of five drops, as being equally efficacious and less liable to produce disagreeable symptoms. He spoke of being frightened at first by the depression which sometimes followed very large doses, but declared that the patients always recovered.

Since Dr. Baker's paper many observers have lent the weight of their approval to this treatment. In the Transactions of the American Gynecological Society for 1887, Jewett says: "Experience seems to justify the statement that no convulsions will occur while the patient is sufficiently under the influence of veratrum to hold the pulse below 60." Dr. T. G. Davis, of Bridgeton, N. J., has reported

six cases successfully treated by the use hypodermically of six minims of Norwood's tincture and one-third grain of morphine combined, the injection repeated as required, the aim being of course to reduce the pulse in frequency and tension. There seems little doubt that in this way all may be attained that is achieved by the blood-letting, without the disadvantages of the latter method. Dr. Reamy, of Cincinnati, reported to the American Gynecological Society at Baltimore in May, 1895, six cases of puerperal eclampsia successfully treated with veratrum viride, with or without morphine. Dr. Reamy had given as much as twenty-five minims hypodermically, and believed that morphine controlled its unpleasant effects. Love, of Orange, N. J., has also strongly advocated the use of veratrum viride in large doses in this disease, and claims never to have been obliged to have recourse to radical measures for the induction or acceleration of labor in eclampsia, and to have carried his cases safely through. He has employed large doses, even a teaspoonful frequently repeated. These large doses, when given per os, generally produce vomiting, and probably are not entirely absorbed, while, when doses of more than fifteen minims have been used hypodermically, especially without the controlling influence of morphine, distressing symptoms have sometimes been met with. These symptoms have, however, seldom if ever led to disastrous results. It would seem, therefore, generally best to combine a moderate amount of morphine with the veratrum and to use the latter drug hypodermically in small doses (of five minims) as being more certain in effect and permitting quicker repetition. When given in this way, one need not hesitate to repeat the injection in half an hour, while if given by the mouth it would not be safe to repeat the dose until a much longer time had elapsed.

It seems advisable to say a few words as to the method of inducing premature labor. Many methods have been recommended, such as the prolonged douche, electricity, forcible and quick or slow and gradual dilatation of the cervix, the tamponade of the vagina, and, last, the introduction of some substance or instrument into the uterus with a view to promote its contraction. Among the latter, one of the most recent methods was that of Pelzer, who advised the injection of glycerin. This method and its modification, by means of which the glycerin is injected into a condom attached to a catheter, after the latter has been introduced into the uterus, may be useful in certain exceptional cases, but have many disadvantages, and the injection of glycerin is certainly not without danger.

It seems to the writer that, except in case of urgency, which does not exist when labor is induced as a prophylactic measure, all other methods must yield to the introduction under the most careful antiseptic precautions of bougies or catheters into the uterus, combined with tamponade of the vagina. The patient and the vagina having been thoroughly cleansed, the cervix should be exposed by speculum and one or more bougies of about 22 F. size, which have of course been carefully sterilized, introduced along the anterior uterine wall for about eight inches. It is well to introduce more than one bougie, in order to ensure more prompt uterine contraction. A small strip of iodoform or other gauze may be now passed up just through the internal os and packed around the bougies, while a larger piece of gauze is used to tampon the vagina snugly but not uncomfortably. When the cervix has been found to be well dilated, after about twelve hours, the bougies and tampons may be removed, or they may be left until expelled by the labor pains. If further stimulus to contraction seems desirable, the vagina may be again tamponed.

From the foregoing it would seem that one is justified, after weighing all the best available opinions, in concluding:

That puerperal eclampsia is due mainly to the non-elimination of toxins which are the direct and natural products of the physiological processes incident to the condition of the pregnant woman, or to the conversion of such products into toxins and their non-elimination, and that the nervous tension of the patient predisposes to the disease.

That while albuminuria during pregnancy should lead to grave apprehension, yet many woman who present this symptom escape convulsions (about seven out of eight), while convulsions may be met with in women whose urine has remained free from albumin until the onset of the convulsions.

That he who saves four out of five women who have been attacked by eclampsia before or during labor may consider that he has been fairly successful.

That we have medicines powerful for good, and that they should be given a fair trial before resorting to accouchement force in actual convulsions.

That at a period when the fetus is viable, especially at the end of the eighth month, if the patient suffers from severe premonitory symptoms, such as anasarca, severe and persistent headache, and the eye symptoms, and particularly if the evidences of nephritis have persisted for some time in spite of treatment, premature labor should be induced in the interest of the mother and child.

That in the actual presence of convulsions we should endeavor to overcome them by the use of proper medicines and remedial measures, notably by the use of veratrum viride, morphine, chloral, and chloroform, rather than resort to the rapid emptying of the uterus.

That in veratrum viride we have a remedy powerful for good when properly used, but that of Norwood's tincture it is better not to inject more than five to ten minims for the initial dose, to be followed by doses of five minims at intervals as required to hold the pulse, and that it is well to combine it with morphine.

THE HEMORRHOIDAL FLUX.

In the *New York Medical Journal* of April 25, 1896, BODENHAMER tells us that if the hemorrhoidal flux is quite moderate it may be a question, under attending circumstances, whether or not to let it alone for the time being; if, on the contrary, it occurs daily, is considerable, and the patient weak and nervous, it must at once be arrested. The writer has generally succeeded in suppressing the hemorrhage in these cases and restoring the patient's health by observing the following course:

To anemic patients of a nervous and serious temperament he has given the following tonic and anodyne pills:

℞ Ferri sulph., ʒ j;
Ext. belladonnæ, gr. vj;
Syr. simplicis, q. s.
M. et ft. mass. in pil. xxiv div.

One pill should be taken morning, noon, and night. Or, to fulfill the same indication, the following solution has been given to very weak, nervous, and anemic patients with immoderate hemorrhoidal flux:

℞ Ferri citratis, ℥ iv;
Sulph. quininæ, ʒ j;
Acidi citrici, gr. xxx;
Aq. dest., f℥ ij.
Fiat solutio.

From twenty to thirty drops of the solution should be taken three times daily in a wineglassful of the cold infusion of wild cherry bark (*Prunus virginiana*); at the same time the infusion may be drank freely through the day.

In addition it is highly important and necessary, in order to arrest the hemorrhage, to inject into the rectum half a pint of cold water just before each evacuation of the bowels, and soon after the evacuation two or three ounces of lime-water (liquor calcis) should be similarly injected, to be retained if possible.

When the hemorrhage occurs drop by drop from the mucous membrane of the rectum, the writer has frequently succeeded in arresting it by the application of nitric acid of a specific gravity of 1.500. The bleeding mucous surface should be delicately touched with it by means of a fine glass-hair brush or with a wooden spatula. Two or three applications will be sufficient, five days intervening between them. Great care should be observed to confine the application to the affected bleeding mucous surface, and not let any of the acid come in contact with the fine, delicate, and highly sensitive muco-cutaneous tissue about the verge of the anus. Immediately after applying the acid, olive oil should be applied to somewhat modify its action.

When the hemorrhoidal flux is very profuse and escaping *per saltum* from organized tumors, nothing will generally succeed in arresting it but the complete removal of the tumors themselves, and it is much easier to arrest the bleeding and effect a complete cure than when the hemorrhage issues *guttatim* from the whole mucous surface. In the former case there is almost always to be found the dilated extremity of a capillary tube in the tumor if the latter be regularly organized and of sufficient age. By removing the tumor, or tumors, the bleeding of course ceases because of the plastic inflammation which follows the operation and which completely seals the bleeding vessel which supplied it.

In all such cases it is of the utmost importance, for obvious reasons, that the patients should have one regular and easy passage daily, avoiding as much as possible extra straining efforts. If the bowels are obstinately constipated, mild laxatives must be taken in addition to the enemata of cold water. The writer has frequently used the following aperient with advantage in such cases:

℞ Sulphuris loti,
Magnesiæ calcin.,
Sacch. lactis, of each, ʒ iv.
M. et fiat pulvis.

Two teaspoonfuls of the powder should be taken whenever indicated.

The writer has used balsam of copaiba and oil of turpentine with good results in the treatment of excessive hemorrhoidal flux.

Acidulated drinks and some of the light wines may be continually used with great advantage during the treatment, together with all means of prophylaxis.

THE BLOOD-CORPUSCLES IN DIPHTHERIA, AND UNDER ANTITOXIN.

BILLINGS contributes the results of an original research upon this topic to the *Medical Record* of April 25, 1896. He concludes his paper by a summary in which he tells us that the red corpuscles of the blood in diphtheria undergo a diminution in number in cases of moderate severity and in severe cases. Regeneration is slow.

The leucocytes are increased in number in all but two classes of cases, exceptionally mild cases and exceptionally severe ones. As a rule, the amount of leucocytosis is directly proportionate to the degree of severity of the case. The leucocyte curve shows no correspondence to the clinical course of the disease. The number of leucocytes often remains higher than normal for days after all inflammatory phenomena have disappeared. The leucocytosis is similar in character to that seen in pneumonia and scarlet fever, the increase being in the so-called polynuclear forms.

The percentage of hemoglobin falls coincidently with the number of the red corpuscles, and to the same relative degree. But the regeneration of the hemoglobin takes place much more slowly than that of the red corpuscles.

In cases treated with antitoxin the diminution in number of the red corpuscles is much less marked than in cases treated without it; in a majority of the cases no such diminution takes place. The leucocytes are apparently unaffected by the antitoxin. The hemoglobin is also much less affected in the cases treated with antitoxin, thus confirming the statement as to the red corpuscles.

In healthy individuals injected with antitoxin, the red corpuscles show a very moderate reduction in number in about one-half the cases; the hemoglobin is correspondingly affected; the leucocytes are apparently unaffected by the injections.

No peculiar characteristic changes in the morphology of the corpuscles were to be made out.

It is improbable that any information of prognostic importance is to be gained by examination of the blood in diphtheria.

The antitoxin treatment of diphtheria has no deleterious effects upon the blood-corpuscles. On the contrary, it seems to prevent degenerative changes which would otherwise be brought about.

A SEVERE CRITICISM.

In the *Centralblatt für Gynäkologie* of March 21, Dr. J. ESSER, "Frauenarzt in Altona," relates the case of a healthy, well built woman who, when six months advanced in her second pregnancy, was attacked with labor pains. Her uterus was as large as it should have been at full term, but the fetal limbs were not to be felt externally, or the heart sounds or the funicular souffle to be heard. Her labor advanced promptly to the expulsive stage, and by the vagina the head was felt to be engaged. The forceps was employed, and with it the head was detached from the body. No hemorrhage occurred from the lacerated surface, and a gentle digital examination caused the umbilical cord to part; in short, it was evident that the fetus had been dead long enough to become thoroughly macerated. Intra-uterine exploration showed that the great distention of the uterus was due to enlargement of the child's trunk. Fearing that the enlarged trunk might contain an accumulation of infectious matter which would come in contact with the maternal parts if delivery by embryotomy was attempted, Dr. Esser had the woman conveyed to his clinic, near by, where he performed the Cæsarean operation after Sänger's method. The enlargement of the child's body was found to be due to distention of the chest and abdomen with a clear fluid. The mother made a satisfactory recovery. Dr. Esser holds that, provided hospital appliances are at hand, the prognosis for the mother is better in such a case if the Cæsarean operation be performed than if embryotomy be resorted to, and in support of his position he cites an analogous case reported by Dr. Ludwig, of Chrobak's clinic in Vienna.

In the same journal dated April 4, however, Dr. F. AHLFELD criticises Dr. Esser's course very severely. It may happen, he says, that in the conduct of a case harrowing both to mind and body, in which one resource after another fails, an obstetrician at last loses

his head and subjects both mother and child to danger by resorting to a wholly unsuitable procedure; and under the circumstances he may be pardoned, or at least the circumstances may be pleaded in extenuation. But in the whole history of obstetrics it has not been recorded before that a practitioner calling himself "Frauenarzt" and having a "klinik" —presumably, therefore, having served for some time as assistant in a hospital—when called to a well developed woman in labor in the sixth month, has applied and reapplied the forceps, then explored the interior of the uterus up to the fundus on the right and on the left, whereby he has ascertained that the obstacle to delivery lay in abnormal distention of the child's body, and finally sent the woman into his "klinik" and performed the Cæsarean operation on her. The climax is capped when Herr Esser has the heart to publish such a case and maintain that his conduct of it was proper.

Dr. Ahlfeld goes on to declare that, if Dr. Esser had followed the precepts laid down in the text-books, his course would have been as follows: When an hour or two had elapsed after full dilatation of the os uteri, and the head, lying deep in the roomy pelvis, failed to advance, he would have suspected at once that the trouble was due to immense distention of the fetal trunk. An examination with four fingers, or at all events with the whole hand, would easily have cleared up the point, and then he would have simply opened the distended trunk with the perforator, after which the child would soon have been expelled without further medical intervention. Think, he exclaims, of what dangers the poor woman had to stand, of how her soul must have quaked when she was told that she had to be sent to a clinic, there to undergo a difficult and perilous operation! Every argument that Dr. Esser brings forward in support of the propriety of the Cæsarean section he declares to be utterly fallacious. Against such blunders, he adds, teachers of young physicians should be loud in their testimony. Nothing of the sort, he says, is taught in any German gynecological clinic, and Dr. Esser has no ground for alleging that his case possessed extraordinary features; on the contrary, that particular cause of dystocia is a typical one, occurs over and over again, and is always to be met in the same way. Ludwig's case, which Esser unjustly adduces, showed real difficulties: the child was gigantic, and a young physician might well have been perplexed as to his choice of resource. But even in this case the Cæsarean operation was unnecessary. Neither case can be regarded as legitimately extending the field of usefulness of the Cæsarean section; on the contrary, each of them should serve as a warning to young physicians.

We have given all the essential points of Dr. Ahlfeld's criticism—not literally translated, it is true, but with all their actual meaning. It is certainly severe; it amounts to a rebuke. We cannot question the soundness of the argument from a scientific point of view, but we may suggest that gentler terms would have answered every purpose except that of squelching a young obstetrician, and such a wish cannot have been in the critic's mind. For one thing, we think, Dr. Esser is to be commended, and that is for publishing so frank an account of his case.—*New York Medical Journal*, April 25, 1896.

FOREIGN BODY IN THE EAR RESULTING FATALLY.

Voss (*La Sem. Med. de St. Petersbourg*, Jan. 10, 1895) reports the case of a child five years old who pushed a dry pea into his ear. Four doctors spent several days endeavoring to extract this body, and only succeeded in pushing it quite out of sight. On the fifth day the foreign body was imbedded in the tympanic cavity, whence it was removed after dissecting the ear forward and opening the posterior wall of the auditory passage; the tympanum was crushed, the ossicles were broken, the cavity was suppurating. The fever from which the child was suffering at the time of abstraction continued, and the patient became comatose and perished four days later.

PNEUMONOTOMY.

Quincke (*Mittheil. aus der Greizgeb. der Med. und Chir.*, bd. i, heft 1) has tabulated and analyzed fifty-four cases of pulmonary abscess treated by surgical operation. These cases, seventeen of which were treated by the author, are arranged in three groups: the first of acute abscesses, both simple and gangrenous; the second of chronic abscess and putrid bronchiectasis; and the last of putrid suppuration caused by a foreign body in the lung. In a large proportion of the fifty-four cases (eighty-three per cent.) the inferior lobe of the lung was the seat of the disease. Of the total number of patients, twenty recovered and twenty died; in the remaining fourteen cases the surgical treatment either failed

altogether or gave but imperfect results. The author makes out from his collection of records that, while the mortality from operative interference is almost equal in acute and in chronic cases, the percentage of complete recoveries is higher by about forty-five in the former than in the latter. It is concluded that the operative treatment of acute pulmonary abscess will be attended with complete success in two of every three cases. The prognosis of such treatment in cases of chronic, and especially putrid, abscess, is much less favorable. The author believes, however, that in future better results may be attained by earlier intervention. Surgical treatment, he holds, is indicated in cases of acute abscess which show no tendency to spontaneous healing. The prospects of an operation in such cases are better than those of expectant treatment. If this suggestion be generally followed, chronic pulmonary abscess with secondary bronchiectasis will, it is thought, be observed less frequently. Notwithstanding the less favorable prospects of operation in cases of chronic pulmonary abscess and sacculated bronchiectasis, such treatment is here recommended for these morbid conditions with the view of protecting against acute secondary inflammation the portion of lung still remaining sound. In cases of multiple bronchiectasis, although *a priori* a good result could hardly be expected from surgical operation, still, the author thinks, improvement may be brought about by such treatment. As such a condition constantly threatens fresh and fatal mischief, an operation, though not clearly indicated, need not be regarded as unjustifiable.

In discussing the diagnosis of pulmonary abscess the author regards as important indications the purulent nature of the expectoration and the presence in the discharge of minute portions of broken-down lung tissue. The quantity of expectorated fluid, he points out, affords no sure indication of the size of the cavity.

In considering the diagnosis of the seat of a supposed pulmonary abscess, he states that when on general grounds the existence of such a cavity is assumed, and a localized area of dullness exists without any distinct local symptoms of suppuration, this area should be selected as the object of the surgical attack. If not the precise situation of the disease, it will in most instances serve as a guide to the purulent collection. Exploratory aspiration is objected to as a measure of diagnosis: it will not show whether the cavity is a large or a small one, and is a very probable source of danger in cases in which the affected portion of lung is not adherent to the wall of the chest.

The author, in concluding his paper, describes his method of treating pulmonary abscesses, which consists in resection of portions of one or more ribs, free exposure of the parietal layer of pleura, and in making with the thermo-cautery a free opening into the cavity after it is certain that adhesions exist between the lung and parietal pleura, or after a prolonged application of caustic has artificially established such adhesions. Pleural adhesions at the seat of operations he regards as an imperative condition in pneumonotomy. If there be any doubt as to the existence of such adhesions, the surgeon must act upon the assumption that they are absent.—*British Medical Journal*, April 11, 1896.

WOUND OF THE JUGULAR BULB FROM PARACENTESIS OF THE TYMPANIC MEMBRANE.

GOMPERZ (*Wiener Med. Woch.*, No. 4, 1895) reports five cases of wound of the jugular bulb incident to paracentesis of the tympanum. One terminated fatally. This accident occurred in every instance in the right ear, owing doubtless to the fact that the right jugular fossa is deeper and larger than the left. The author holds that in certain cases it is easy to detect this projection of the jugular vein through the tympanum, a bluish circular or biconvex projection being present in the lower posterior quadrant. Usually this coloration is unilateral. It is always wise before performing paracentesis to look for this sign of anomalous vascular disposition.

ARTIFICIAL DELIVERY AFTER MATERNAL DEATH.

CLAVERIE (Thèse de Paris, 1895) agrees with Lebreton (1828) and Duparcque (1823) in the principles first laid down by the latter that, when a woman dies before labor has commenced, immediate delivery by the natural passages is necessary. The cervix should be laid open to facilitate immediate dilatation. Cæsarean section, it is said, has revived apparently dead women when the knife had already been used too freely and too roughly to allow of permanent resuscitation. Some of these gruesome incidents may be fables, muscular twitchings being mistaken for signs of life. In any case, however, no woman has

been victimized in this manner when delivered after Duparcque's principle, while several have proved to be alive and subsequently recovered. Though delivery through the vagina takes some time, it can be commenced at once in private or hospital practice, so that the child is usually got out more quickly than by Cæsarean section. It appears from statistics that as many if not more children are saved by Duparcque's method. The cutting open of the cervix is, of course, very essential when the body is that of a primipara. Artificial delivery is always preferable to Cæsarean section if it is not quite certain that the mother is dead.—*British Medical Journal*, April 11, 1896.

FAT EMBOLISM AFTER FORCIBLE STRAIGHTENING OF THE KNEE.

AHRENS reports a case in which forcible straightening of both knees was done. The patient was fifty-three years of age, and the condition of anchylosis had existed for a long time. Gradual straightening by extension was first employed, and later forcible straightening for the remainder of the deformity. Two days after the operation the patient became drowsy, and died the next day. The autopsy revealed a fat embolism of the lungs. The ends of the bones were in an advanced stage of osteoporosis, and showed two recent crushes.

He cites two other analogous cases reported by Halle and Marburg, and concludes that the field is limited for this work, which is contra-indicated when one may expect fatty degeneration of bones and muscles.—*Boston Medical and Surgical Journal*, March 26, 1896.

LAMINECTOMY IN CARIES OF THE SPINE.

EDMUND OWEN (*Archives of Pediatrics*) is doubtful as to the value of laminectomy in paraplegia from caries, as in the natural course of the disease there is a recovery from the paraplegia. He would not advise operation unless there are very strict indications for it; it is difficult to know beforehand whether there is direct pressure from bone or granulation. He has secured two anatomical preparations which show that the vertebral arches were anchylosed in a case of laminectomy.

PARKIN (*British Medical Journal*, Sept. 29, 1894), on the other hand, recommends the operation with a great deal of enthusiasm. He considers that paraplegia in caries is due to three causes:

1. Pressure upon the cord by means of tubercular or cheesy masses. This is the most frequent cause.

2. Dislocation of the vertebral bodies, or compression of the cord through portions of bone.

3. Pressure upon the cord through newly formed fibrous tissues. External pachymeningitis.

He considers that extension and counter-extension have no influence upon paraplegia, but that laminectomy has an immediate effect, and that a permanent cure can be accomplished by curetting tubercular foci; the deformity can be inproved and the operation is not a difficult one.—*Boston Medical and Surgical Journal*, March 26, 1896.

REMOVAL OF THE STERNO-MASTOID IN MUSCULAR WRY-NECK.

MIKULICZ (*Centralbl. für Chirurgie*, 1895, No. 1) has removed the sterno-mastoid in seventeen cases, eight being partial and nine total. A long incision was made between the clavicular and sternal portions, both portions of the muscle separated from the bone, and the muscle drawn out as far as the mastoid process, a portion of it being left in order not to injure the accessory nerve. The result from the operation was excellent, except the deformity of the neck following. The muscles removed were examined microscopically, and the result of a chronic diffused inflammatory process was found, without evidence of a rupture in any portion. In ten cases the lymphatic glands were enlarged; three were tubercular, and seven hyperplastic.

KOSTER (*Deutsche Med. Woch.*, 1895, No. 8) made an examination on a child twenty-seven days old, born by artificial delivery. In place of the right mastoid, there was a thick fibrous lump, 4 centimeters long and 2 wide. The normal left sterno-mastoid was 6½ centimeters long and 1 wide. The right was not firmly united to the surrounding tissue. A microscopic examination of the diseased muscle showed fibrous degeneration, but at the upper end true muscular structure was to be found. The process, according to Koster, was fibrous degeneration, which existed before birth.

KRUKENBERG (*Archiv für Gynäk.*, bd. xlvi, s. 497) reports a case in his experience as of value in regard to the origin of wry-neck, and as to whether the deformity is caused by

birth. The case was one of a large child where the birth was difficult. No hematoma was present, nor any forceps marks on the neck; but there was a deep fold of skin upon the affected side, and a noticeable lack of fat-development on one side of the neck. This he attributed to the fetal position *in utero*, which can, according to Koster, under certain conditions give rise to an abnormal position of the head, and cause torticollis without injury of the muscles.

OSSEOUS TUMORS IN THE EXTERNAL AUDITORY MEATUS.

Two cases in which removal was effected are described by MOURE (*Revue Hebdom. de Laryngol.*, Jan. 18, 1896). The growth in each case was pedunculated and occluded the meatus. He made an incision through the skin covering the base, then inserted a gouge and levered the growth away without using the mallet. When the growth is situated very deeply he advises detachment of the auricle and meatus to permit of free access to it for removal. He considers the condition a rare one, and only calling for operation if the growth causes real discomfort by producing deafness or preventing the escape of discharge from a suppurating middle ear. It is important not to mistake for exostosis a bulging of the posterior meatal wall or simple eburnation of the meatus.—*British Medical Journal*, April 4, 1896.

PLASTIC OPERATION FOR PROLAPSED OVARY.

SAENGER (*Centralbl. für Gynäk.*, No. 9, 1896) has twice practiced a new conservative operation for the relief of chronic disease of the appendages. He terms it "pelvifixura ovariorum." In many cases of long-standing pelvic inflammation the uterus is found displaced more or less backwards, and the ovaries prolapsed and adherent to Douglas's pouch. He objects to fixation of the uterus against the abdominal wound and to removal of ovaries that can be saved. He therefore replaces the uterus after setting free all adhesions which hold it back, and passes a silkworm-gut suture through the uterine tissue close to the cornu on each side. The two sutures are passed through the parietal peritoneum below the level of the abdominal wound and as near as possible to the bladder. Then the tube and ovary are drawn up on one side. Two or more fine silk sutures are passed, either through the mesosalpinx close under the ampulla of the tube, or through the infundibulo-pelvic ligament immediately behind the ovarian fimbria. A piece of the peritoneum on the wall of the bony pelvis at the level and immediately in front of the outer origin of the infundibulo-pelvic ligament is raised into a fold with forceps. The silks are passed through this fold. Then they are tied. The opposite appendages are treated in the same manner. Thus both are brought back to their right level, the pain and congestion of the ovaries due to prolapse being cured. Saenger declares that the mobility and blood supply of the ovaries are in no way disturbed by this operation of pelvifixation of the ovaries.—*British Medical Journal*, April 11, 1896.

POSTERIOR URETHRITIS.

FINGER (*Wiener Med. Woch.*, 1895; quoted by *Centralblatt für die Krankh. der Harn und Sexual Organe*, bd. vii, heft 1, 1896) holds that acute posterior urethritis is nearly always associated with catarrh of the prostate gland. This catarrhal condition cannot be detected by rectal palpation, but is confirmed by examination of the urine, small comma-form shreds being found in the last drops voided, especially after milking of the prostate. Acute follicular prostatitis is an extremely rare affection. It is principally diagnosed by rectal palpation. There is found a very tender nodule in an otherwise not enlarged prostate, either in the middle line or near this. After it is ruptured the last urine-drops contain masses of pus. Suppurative parenchymatous prostatitis is a condition so thoroughly described in text-books that the author spends very little time on it. Chronic glandular prostatitis is a very common complication of chronic urethritis. It is the origin of the constantly recurring posterior urethritis. Sometimes the secretion of the prostate gland contains gonococci, thus serving as a means of direct auto-infection, or this secretion may be entirely free of bacteria.

In considering the therapeutics, Finger especially urges expectant treatment, as no injection solution can penetrate where the gonococci are found. The value of injections in the later stages depends upon the fact that by setting up a free suppuration gonococci are eliminated from the deeper parts of the mucous membrane. Finger places less importance upon the disappearance of the gono-

cocci than he does upon the entire disappearance of all secretion, thus differing somewhat from the prevalent practice and belief.

A CASE OF LATERAL DEVIATION OF THE TRUNK, PRODUCED BY ADHESIONS OF THE SUPERIOR GLUTEAL NERVE TO AN EXOSTOSIS OF THE ILIUM.

In the *Intercolonial Medical Journal of Australia*, vol. i, No. 2, CRIVELLI reports a most interesting case: The patient, a robust, vigorous man, thirty-three years of age, fell over a bar of iron about five years ago. The whole weight of the body was thrown on the site where pain is located at present, *i.e.* towards the posterior part of the ilium of the left side. The pain disappeared at the end of seven days, and he paid no more attention to it. He remembers only that, now and then, after over-fatigue, he felt on several occasions, always at the same spot, a pain which made him limp slightly with the left leg. In the beginning of 1893 this pain became continuous and radiated the whole length of the muscles of the thigh. The patient began to limp constantly, and walking increased the pain, so that he acquired the habit of leaning the whole weight of his body on the right leg, that he might bear as little as possible on the left foot. From this time the deformity, which was at first occasional and visible only in walking, became his habitual attitude. Massage, friction, liniments, electricity, rest, and baths, were all tried without success.

When he first came under the author's observation he presented an extraordinary attitude. The two legs were straight, and the two anterior and superior iliac crests were on the same level; the only abnormal feature in the lower part of the body was the atrophy of the lower limb and the hip. The principal deviations were to be found in the trunk. The abdomen was completely inclined to the right, so that, seen from the front, it formed a regular arc of a circle, convex to the right and concave to the left, the lumbar region standing out to the right and being thrown outside the right iliac crest, whilst to the left the iliac crest projected and formed a concavity with the muscles of the abdomen which were directed upwards and inwards towards the navel, this latter being almost above the right iliac crest. On the right side the false ribs projected under the skin, whilst on the left the intercostal spaces were diminished. The shoulders were straight, but if a straight line were let fall from the head of the left humerus, on the body, it would pass almost through the spine of the pubis on the same side. The muscles of the abdomen and the thorax worked properly, whilst the muscles of the sacro-lumbar mass of both sides were rigid, contracted, and allowed no mobility of the deviated vertebral column in the lumbar and dorsal regions. The only symptom of which the patient complained was a dull pain on the outside of the ilium, which was only felt during movement, but walking made it intolerable. This condition lasted two years without improvement.

Operation was performed April 9, 1895. After administering chloroform, attempts were made to break down the adhesions, but failed. The patient was then turned on his right side, the left thigh slightly flexed, and a long incision (ten centimeters) made, three centimeters below the iliac crest, in the middle of the gluteal region, and directed from above downwards, from before backwards, perpendicularly to the direction of the fibres of the gluteus maximus muscle. The muscle, divided perpendicularly throughout its thickness and in nearly all its width, except below, was held back by the aid of two broad retractors. The gluteus medius muscle was divided in the same direction, and retracted after a branch of the superior gluteal artery was tied. The finger introduced into the wound recognized the edge of the great sacro-sciatic foramen, near which could be felt a protuberance, rounded in form, fixed on the external table of the ilium, about a centimeter in height and three centimeters wide. All the adjacent tissues were adherent to this thickening, to which were attached the fibres of the gluteus minimus and the pyramidalis muscles. The pyramidalis having been freed, and the fibres of the gluteus minimus scraped away, the bone was laid bare. The finger, passed on to the border of the sacro-sciatic foramen, came upon the superior gluteal artery, easily recognized by its pulsation. The vessel being drawn downwards, a little hard cord without any pulsation was felt, which could be no other than the superior gluteal nerve. The nerve was not free, and following its direction with the nail the operator felt that it exactly reached the previously described protuberance, in which it was enclosed. It was scarcely possible to say whether it was the two divisions of the superior gluteal nerve joined, or only its superior branch. The excrescence, having been well laid open, was attacked with a

strong curette in a direction parallel to the nerve, so as to guard it as much as possible. After curetting for a few seconds the nerve was made free, separated from the protuberance, caught on a hook, and an assistant retracted it in the same direction as the vessels. The tumor, which was half fibrous and half osseous, was then well scraped till it completely disappeared, and till the external table of the ilium presented a smooth level surface. After carefully washing with a strong solution of phenosalyl, the edges of the wound were brought together and kept in place by two deep and several superficial sutures. An antiseptic dressing was applied, and the patient kept perfectly quiet.

The after-treatment was most simple. The patient never had a rise in temperature nor any inconvenience whatever. The deep sutures were removed on the fifth day, and the superficial ones on the eighth day. On the fifteenth day the patient began to get up, and rested his foot on the ground; the pain over the left ilium had quite disappeared, but the deviation of the body remained pretty much the same.

Two and a half months after operation, the gluteal cicatrix was the only sign left of the old lesion. The patient recovered completely; his muscles developed, and the various parts of the body became symmetrical in the standing position. Walking was easy, and the patient felt the left limb as strong as the right, and returned to his work as a mechanic.

HOUR-GLASS STOMACH DUE TO CICATRIZATION OF GASTRIC ULCER.

FRANCIS WATSON (*Boston Medical and Surgical Journal*, April 2, 1896) contributes an interesting and instructive paper on this subject.

Seven years ago the patient, a woman aged thirty-two, had an attack of jaundice accompanied by pain in the epigastrium and vomiting of blood. She remained well for two years after recovering from this attack, when the following symptoms appeared: eructations, nausea, and tenderness in the epigastrium, most marked immediately after taking food. The symptoms gradually increased in severity, and for the past three years she has been in almost constant pain. Vomiting began nine months ago, and has occurred almost daily ever since, with the exception of five weeks when the patient was fed by rectal enemata. Within the past year she lost forty pounds in weight, and weighs now eighty-seven pounds; menstruation was absent for six months. She was very weak and could scarcely walk. There was no look of cachexia, but great pallor and emaciation, and she was in a very critical condition.

The abdominal wall was retracted and rigid. On the left side of the epigastrium there was an area of tenderness and an ill-defined induration and swelling.

Operation was performed September 13, 1895. A V-shaped incision was made in the epigastrium, and the stomach exposed. At a point one-third of the way from its duodenal end was a hard mass of cicatrix, circular in form, involving the larger part of the circumference of the organ and constricting it very narrowly. The constriction did not seem to be of a cancerous nature, but rather to be due to the cicatrization of former ulcers of the stomach.

The writer had expected to find cancerous disease of the stomach or duodenum. In the face of the conditions described above, gastro-enterostomy or a plastic operation by division of the structure longitudinally, and suturing it transversely after the manner of the pyloro-plastic operation, or resection of the cicatrix, were, as far as the author knew, the only operations that were applicable. It seemed to him that it would be better, however, to establish an anastomosis between the upper and lower parts of the stomach, instead of between the stomach and the intestine, and in this way to retain the useful function of the natural outlet of the stomach. The pyloro-plastic operation was not selected, because of the great amount of cicatricial tissue present, and the difficulty of securing a sufficiently wide opening. Resection of the cicatrix, and union of the two portions of the stomach afterward, seemed to involve greater danger than the operation which suggested itself to the writer—as mentioned above.

Anastomosis between the two ends of the stomach was accomplished in the following way: The pyloric portion and the first part of the duodenum were lifted upward and turned over upon the cardiac portion (the constricted part acting as a hinge), and united to it by a single row of fine silk sutures in the form of an ellipse, four inches in length and one inch and a half in width. One suture was left long on either side of the ends of the ellipse, to indicate the space enclosed by the line of sutures, and to serve as a guide for making the communicating in-

cisions in the stomach. The sutured surfaces were somewhat nearer the greater than the lesser curvature of the stomach.

This complete joining of the two portions before making the communicating incisions between them was done in order to avoid spilling any of the stomach contents into the peritoneal cavity, and is, so far as the author can learn, an original method.

The operation was now continued as follows: The only way to gain access to the surfaces united within the sutured ellipse was by making an incision through the upper part of the turned-over pyloric portion. Through this opening, a communicating incision, three inches in length, between the two portions of the stomach united within the sutured ellipse, was made; this allowed examination of the stricture from within the stomach. The stricture was found to be dense and non-dilatable, and barely admitted the little finger. The edges of the communicating incisions were sewed over-and-over, so as to prevent their uniting. The patient's condition at this point being critical, the incision through the pyloric portion of the stomach, which had given access to its interior, was rapidly sutured, the stomach returned to the abdomen, and the abdominal wound completely closed.

Five months from the date of operation the patient had gained twenty-seven pounds and remained in excellent health, although working hard as a cook.

CUNEIFORM OSTEOTOMY FOR RELAPSED INVETERATE CLUB-FOOT.

YOUNG and FRAZIER (*University Medical Magazine*, April, 1896) detail the following case:

All the history of the case obtainable prior to its coming under the writers' observation is summed up as follows: The first operation for the correction of the deformity, double talipes-equino-varus, was performed about four years ago, at which time both astragali were removed and in addition the tendo Achillis and anterior and posterior tibial tendons were divided. Unfortunately, after this operation extensive suppurative cellulitis ensued, rendering all attempts to retain the feet in their correct position futile.

About eighteen months ago a second operation was performed, consisting of a tenotomy of the tendons of the tibialis anticus, tibialis posticus, flexor longus hallucis, and division of the plantar fascia.

On November 7, 1895, the right foot was operated upon by Dr. Young by tenotomy, cuneiform osteotomy, and open section with division of the soft tissues. To describe the operation more in detail, an incision was made just below the tip of the external malleolus, commencing one-half inch posterior to, and ending one and one-half inches anterior to, its median line. Through this incision was performed the osteotomy, as recommended by Davis, removing a wedge-shaped section of bone involving portions of cuboid, scaphoid, and cuneiform bones. On the internal surface of the foot a second incision was made, perpendicular to the axis of the foot, midway between the tuberosity of the os calcis and head of the first metatarsal bone, dividing the soft structures of the arch of the foot. Then followed a subcutaneous tenotomy of the tendo Achillis. The operation was completed with correction of deformity by manual force, quite vigorously applied.

The internal wound, gaping as a result of this correction, was packed with iodoform gauze; the external wound was closed with silkworm-gut sutures. Over all a sterilized dressing and a plaster-of-paris cast were applied. It will be noted that the internal wound was in this case treated by the open method, that of allowing the deficiency to be filled in with granulation tissue. The subsequent course of the case was uneventful. The dressings were changed about every fortnight until healing was complete.

On December 5, 1895, the left foot was operated upon. The operation itself was precisely similar to that above recorded. The distinguishing feature of the two cases lies in the method by which the internal wound was treated. It has already been noted that in the right foot the open method was employed, that of allowing the wound to fill up with a blood-clot, with a view to its eventually becoming organized.

The dressings were allowed to remain on unchanged till five weeks had elapsed, there having been no evidence that the wounds had remained other than perfectly sterile. On removal of the dressings both wounds were found to be completely healed and the position of foot most satisfactorily corrected.

The operation of cuneiform tarsectomy, or osteotomy, is only performed in the most severe cases of talipes-equino-varus, and in that case it is seldom required until all other methods, including removal of the astragalus, have failed. The present case was one of the

worst cases that ever came under the authors' observation, and it would have been impossible to restore the foot in any other manner.

The operation was performed with a short-handled gouge chisel, which facilitates greatly the removal of the wedge-shape piece of bone, and is preferable in every way to an osteotome or saw.

The authors claim that this is the first time this method has been employed in Philadelphia. The asepsis must be absolutely perfect to enable the operator to confidently dress the case in this manner. A piece of protective dipped gauze was stretched across the gaping wound, a large antiseptic dressing was applied, and the foot was encased in plaster and suspended before the Esmarch tourniquet was removed. The wound remained sterile for five weeks, when the incisions were healed. The advantages are, a smaller cicatrix, more perfect healing, and no post-operative dressings.

The apparatus which the patient now wears to prevent a relapse, consists of a steel stirrup fastened to the shoe, with lateral uprights extending to the upper third of thigh, with a loose joint opposite the ankle and a stop-joint opposite the knee. Pressure-pads are applied to the outer ankle and inner knee. An elastic strap is attached to the outer side of the shoe and upper part of corresponding upright.

WIRING IN FRACTURE OF THE OLECRANON.

ADENOT (*Lyon Médical*, 1895, p. 489) reports the case of a man who sustained a compound fracture of the olecranon process. The separation was of the width of two fingers. The wound having been cleansed, the fragment was brought down and sutured in place with two silver wires. The arm was placed in plaster in a slightly extended position. One of the metallic sutures was removed on the twentieth day, but it was impossible to remove the other. This latter presented itself beneath the skin one and a half months later, and was removed without trouble. He states that he did not encourage the patient to use his arm too soon, because he preferred a good result to a premature mediocre one.

On the patient's return to the hospital, three months later, the movements of the articulation were complete and he had resumed his occupation as a mason. Attention is called to Tripier's observation that the fragment in cases of fracture of the olecranon is not infrequently tilted by the action of the triceps muscle.—*University Medical Magazine*, April, 1896.

FORMALIN-CATGUT.

HOFMEISTER (*Centralbl. für Chir.*, 1896), from the various methods which have been advocated for the preparation of catgut by formalin, has selected the following as the simplest and most satisfactory:

1. Hardening of the catgut on glass spools in four-per-cent. formalin solution for twenty-four hours.
2. Boiling in water for ten minutes.
3. Preservation in alcohol containing five per cent. of glycerin and 0.1 per cent. of corrosive sublimate.

From the beginning to the end of the process the catgut remains on the same spools, and is not touched by the fingers. If it is not wound on spools it is twisted by the formalin, and especially by the boiling, into useless kinks.

When it is first put into formalin, it is necessary to see that no air bubbles remain in contact with the catgut.

A METHOD OF MAKING TRACTION UPON THE FINGERS.

SCHMIDT (*Münch. Med. Woch.*, 1895, p. 905) suggests that extension would be an excellent method to employ in the treatment of fractures of the fingers, and has found that if two small holes are drilled in the free portion of the nail, close to its point of detachment from the matrix, and a stout thread run through these holes so that its ends pass from the dorsum toward the palmar surface and its loop lies across the dorsum of the nail between the holes, a weight of two kilogrammes can be borne without breaking the nail. Much less tension than this, however, will answer all needs. In two cases he has seen the newer part of the nail soften under the traction and the nail thrown off, but a new nail developed in course of time. This method of extension he considers far superior to any by sticking-plaster.—*American Medico-Surgical Bulletin*, April 11, 1896.

VENTRO-FIXATION AND VAGINO-FIXATION OF UTERUS.

MERCKEL (*Der Frauenarzt*, March, 1896) concludes a series of papers on the relative merits of operations for the relief of retro-

flexion. The abdominal and vaginal operations have distinct merits and advantages, and sufficient results have been made public to enable a fair judgment to be passed upon them. Merckel is inclined to prefer ventrofixation in all uterine displacements where abdominal section has already been undertaken for other affections, such as ovarian or uterine tumor. It is the right operation for virgins and married women subject to retroflexion without fixation of the uterus, where pessaries cannot be tolerated owing to narrowness of the vagina or psychical causes. Dührssen's vagino-fixation is to be practiced in retroflexion in women with a wide vagina where other plastic procedures are needed at the same time. Colporrhaphy, excision of the portio vaginalis or perineoplasty is often called for in cases where vagino-fixation is necessary.—*British Medical Journal*, March 28, 1896.

TREATMENT OF FRACTURE OF THE PATELLA WITH CONTINUOUS EXTENSION AND WITHOUT CONFINEMENT TO BED.

BRYANT (*Medical Record*, April 4, 1896), in a paper on this subject, describes the following method:

The first step consists in the application to the leg of a plaster of-paris splint extending from the bases of the toes up to and partly surrounding the lower fragment of the patella. The plaster casing is applied closely to the leg at a time sufficiently in advance of the succeeding steps to permit of its becoming thoroughly hardened. The upper anterior border is carefully shaped so as to hold the lower fragment of the patella in proper position.

The functions of this splint are threefold: (1) It affords protection to the foot of the patient from the effects of the pressure of the rubber extension which passes across the sole from side to side. Practically the extension acts on the tissues of the thigh from the sole of the foot. (2) The lower fragment is thereby confined in position at the outset, and is maintained there by the upward pressure of the splint, due to the force of the elastic extension as it passes across the sole of the foot. In any event, the pressure of the splint at this point can be easily regulated, either by cutting away or padding it at the border contiguous to the lower fragment. (3) It gives proper support to the lower extremity of the extending-brace of the apparatus.

The measures of the second step consist in the application to the thigh of an adhesive-plaster extension fashioned after the manner of the well known Bucks extension, which in this instance reaches from the perineum to the upper border of the upper fragment and is held in place by the application of an ordinary roller, as usual. The strip of plaster terminates in the form of loops at either side of the limb a little below the knee. The rubber extending-cords are passed through the loops, or attached to hooks connected with them. Moderate extension is then made on the loops by the elastic cords, to draw downward as far as proper the superficial soft parts of the thigh and the upper fragment of the patella. While extension is thus being made the thigh is encased in a plaster-of-paris splint reaching from the upper limit of the adhesive plaster down to the upper fragment, where it is so fashioned and padded as to hold this fragment as nearly in contact with its fellow as possible.

The objects of this plaster-of-paris addendum are: first, to aid in holding the adhesive dressing of the thigh in as firm position as necessary; second, to afford a support for the upper end of the posterior extending-brace hereafter mentioned; third, to coapt the tissues of the thigh, thereby exercising a controlling influence over muscular contraction; fourth, the making of direct extension on the quadriceps extensor, by reason of the close application of the splint to the upper fragment of the fracture and the tissues contiguous to it.

The third step consists in placing the posterior support or brace in proper position and fixing it there by means of plaster-of-paris rollers carried around it and around the upper and lower segments of the splint where they lie in contact with each other. These bandages should harden quickly, and thus incorporate the posterior support at the upper and lower ends firmly with the plaster-of-paris structure at these situations. A strip of wood about two inches in width, an inch and a half in thickness, and of sufficient length to be firmly incorporated in the plaster-of-paris segments of the apparatus, will answer the purpose of the posterior support. Two small iron rods of proper length, placed parallel with and close to each other, will meet the demands of a support.

The fourth step consists in drawing together the fragments of the patella as firmly as possible, either with adhesive strips ob-

liquely applied, as is commonly done for this purpose, or by means of a knee-cap suitably constructed and applied to meet the same ends. If strips of adhesive plaster be employed, they are fastened in place by attaching them to the uncovered parts of the posterior support. If the knee-cap be used instead, it is applied without reference to this support. In applying the plaster strips at the line of junction of the fragments, care should be taken or the strips will be drawn between the fragments and thus interpose an obstacle to proper repair. The hamstring tendons should be properly padded, so that neither the adhesive strips, the knee-cap. nor the leather collars of the text-books can cause pressure or chafing of them. And, too, either of the above agents can be more readily and serviceably applied if the extending force be drawn aside to permit of greater room and more careful application.

After the apparatus is comfortably in position, the patient is permitted to walk about with the aid of crutches, the limb meanwhile being supported in an advanced position by the agency of a sling carried beneath the sole of the foot and around the neck of the patient.

The apparatus should be made as light as is consistent with proper strength and service. In fact, it is not always necessary to imbed the posterior support in the plaster-of-paris by the addition of more of this material; but, instead, the posterior support may be bound in position by a firm roller bandage applied at either extremity of that structure. The adhesive-plaster strips aid also in holding the posterior support in position.

Thus far Bryant has treated thirteen cases of fracture of the patella by this method. The results are equal in all respects to those obtained by other mechanical non-operative measures. The plan is presented not as a substitute for operative measures, but as an adjunct to them, as the patient can, with this appliance, be about without special danger or discomfort after wiring, etc., and closure of the wounds of the soft parts. The idea is to accomplish without long confinement in bed a cure that is equal to one ordinarily attained only by the sacrifices incident to such a confinement.

THE VALUE OF TETANUS ANTITOXIN.

NOCARD (*Bulletin de l'Académie*, No. 42, 1895), after a discussion as to the nature and varieties of the toxins and the immunizing of animals against diphtheria and tetanus, holds that diphtheria sero-therapy is efficacious because it is begun in the very earliest stages of the disease, whilst in tetanus the entire organism is infected long before the remedy is applied. Experimentation has absolutely proven the protective value of injections, hence the desirability of employing these injections in cases of wounds which are likely to be followed by tetanus It must be acknowledged that the curative treatment of this disease as yet remains to be proven. The preventive value of the serum cannot, however, be contested.

THE PAIN OF RENAL STONE.

Before the Medical Society of London, Mr. HURRY FENWICK read a paper on the above subject. He has had a series of uncomplicated nephrolithotomies to account for the difference which appeared to exist in the character and severity of the pain produced by stone in the kidney. He asserted that uncomplicated stones in the kidney could be divided into three classes: (1) those lying loose in the pelvis; (2) those under the capsule lodged in the cortex of the kidney; and (3) those contained in the fleshy part of the kidney, the columns of Bertin, or pyramids. The pain and suffering in loose pelvic stones were usually typical; they evoked colics, radiations, and often bladder symptoms. The cortex stones did not evoke colics, radiations, or bladder irritability, but merely a severe fixed pain. The intermediate group (the parenchymatous class) partook of the characters of both, for the hollows in which they lay often communicated with the pelvis by fine channels. One prominent symptom seemed in many instances to separate the imbedded stones from the pelvic stones. In the cortical stones the patient was forced to sleep on the kidney in which the stone was lodged, but could not turn, without pain, on the healthy side. Often in case of pelvic stone the patient lay on the kidney of the unaffected side. Another sharp line of difference between the cortical and the pelvic stones was found in the urine. Pelvic stones usually caused pus in the urine within a year or so, but the cortical stones did not change the character of the urine, even after twenty or more years.

Dr. ROLFE followed with a paper on the cases of renal pain calling for medical, as distinguished from surgical, treatment. He divided the cases into those in which the pain

was dependent upon reflex nervous disturbance, and the so-called "aching" kidney. The former is met with in association with valvular disease of the heart, more particularly aortic, and thoracic and especially abdominal aneurism. The aching kidney, he suggested, was usually due to movable kidney, but was also met with as the result of tight lacing, and from undue acidity of the urine or other excess of some normal constituent of the urine.—*British Medical Journal.*

MODIFICATION OF CHOPART'S AMPUTATION.

Within the past year, SENN has introduced a novel and important modification of Chopart's amputation of the foot. It is well known that after this operation the tendo Achillis often contracts and throws the end of the stump forward, so that the patient walks on the corner of the stump instead of on the plantar surface. At best there can be no voluntary flexion or extension, and no elasticity to the step. To obviate this, Senn dissected out the flexor and extensor tendons and brought them together over the stump, lapping them so as to give ample room for stitching. The patient, a young man, made an excellent recovery, with the most beautiful result: the tendons united so that perfect flexion and extension was secured. This result will certainly give a much more natural and elastic step in walking. This is the first instance on record where the tendons were united over the end of the stump in Chopart's operation, and it reflects credit upon the skill and ingenuity of the operator.—*Medical Sentinel.*

A SERIES OF ONE HUNDRED OPERATIONS FOR APPENDICITIS.

MORRIS (*Mathews' Medical Quarterly*, April, 1896) reports thirty-four cases of acute appendicitis with abscess, and four of chronic with abscess. All were operated upon, except two patients, who died before his arrival —one from suppurative nephritis, the other from septic peritonitis. Several were septic at time of operation. In two the appendix had already sloughed. Where the appendix was in a gangrenous condition, fecal fistula followed; all but one have closed. Saphenous phlebitis occurred in four cases; three times it was on the left side. The technique comprised the smallest useful incision, peroxide of hydrogen, and saline solutions for irrigation of the cavity, a wick for drainage, with accurate coaptation of the various layers. No gauze packing; no opium.

The entire freedom from post-operative hernias he attributes to accurate coaptation of the abdominal layers, and suturing the cecum to the margins of the abdominal opening in suitable cases.

In thirty-eight cases of acute or chronic appendicitis without abscess, the appendix was removed through an incision of one and one-half inches. No adhesions were met with in thirteen of these. No deaths occurred. In two adherent cases the appendix was found to have atrophied to mere fibrous cord.

One case showed cancer of the appendix, and six tuberculosis. All recovered.

Torsion of the appendix was met with in two cases, causing obstructions and distention with mucus.

Two concretions were found present in one appendix, causing persistent nausea and pain. The organ was in a healthy condition; the concretions were expressed into the cecum, and the appendix left *in situ.* All the symptoms subsided.

He advises that the surgeon should make the diagnosis, then operate, regardless of the stage to which the disease has progressed.

TREATMENT OF CHRONIC INFLAMMATION OF COWPER'S GLANDS.

As the chief cause of chronic inflammation and fistulæ of Cowper's glands, ENGLISH regards the persistence of remnants of the gland. An effective treatment for these fistulæ is to divide the fistulous track, open the cavity, and remove glandular remains by means of repeated applications of caustic potash, the Paquelin cautery, or the sharp curette. The best method of treating chronic tumefactions is extirpation of the entire gland or of the remaining portions, in the following manner: An incision is made through the skin over the most prominent part of the gland; the nearer this is situated to the middle line, the more nearly parallel the incision should be with the perineal raphe. After the skin, subcutaneous cellular tissue and perineal fascia have been divided, the loose celular tissue enclosing the gland is reached, and the latter can now be readily enucleated, the bleeding being inconsiderable. Enucleation of the anterior portion of the gland, however, requires some caution, as firm adhesions may be present here. The insertion

of a catheter into the urethra prevents injury of the canal, although this is not likely to occur if the dissection be carefully carried out. On the other hand, if extensive adhesions exist, enucleation may be attended with much difficulty, and in this event insertion of the index finger of the left hand into the rectum is of much assistance. Enucleation of the connective-tissue envelope is free from risk and facilitates recovery, as the margins of the wound are then composed of normal tissues. If cutaneous fistulæ are present it is often sufficient to lay open the track, in order to expose the gland and remove it in the above-described manner. If several fistulous tracks be present they must all be divided, and if a rectal fistula coexists the sphincter ani must be split also. The chief aim is to expose the gland as thoroughly as possible so as to facilitate its complete removal, for upon this depends the success of the operation. Proliferating granulations are to be removed with the thermo-cautery.

Urinary fistulæ require, in addition to the above treatment, that a catheter be left in the urethra.

In cases of fistulæ following laceration of the dilated ducts of Cowper's gland, extirpation is also indicated.—*Wiener Klinische Wochenschrift*, No. 49, 1895; *International Journal of Surgery*, April, 1896.

HYSTERO-MYOMECTOMY AND HYSTERO-SALPINGO-OÖPHORECTOMY BY CONTINUOUS INCISION FROM LEFT TO RIGHT OR FROM RIGHT TO LEFT.

Before describing his operation, KELLY (*Bulletin of the Johns Hopkins Hospital*, vol. vii, Nos. 59-60) states that radical extirpative procedures will be avoided in a large number of myomatous uteri if the surgeon will carefully study out the relations of the body of the uterus and of the uterine cavity to the tumors; he will then often find that the tumors are so disposed that he may enucleate them by one or more incisions, and save the uterine body intact. This may even be done with interstitial tumors as big as a man's head, and where the fundus is raised in the abdomen as high as the umbilicus. Kelly has in one case taken out seven tumors by as many separate incisions. Cases so treated may be looked upon from a practical surgical standpoint as closely analogous to the long uterine wound closed in a Cæsarean section.

The radical method will be avoided in a large number of the worst forms of inflammatory cases, those in which pus has formed, by the writer's method of free incision in the vaginal fornix behind the cervix, followed by free drainage, without the removal of any organ. An abdominal incision may be required to guide the vaginal hand in breaking up all the pus-pockets.

Hydrosalpinx and adherent tubes and ovaries may be treated by breaking up the adhesions, and by splitting open the dorsum of the tube and dilating its lumen. In such bad inflammatory cases the operator should let the patient definitely understand that she takes some chances as to recovery under this plan of treatment, and may after all have to submit to the radical operation later.

The field left for the extirpation of uterus, tubes, and ovaries, after making these important exceptions, is greatly limited. It includes hystero-myomectomy for uteri distorted by myomata or enormous myomatous masses, where the question of conservatism is as yet in abeyance. It also includes hystero-salpingo-oöphorectomy for cancer affecting both ovaries, and ovarian cystomata affecting both sides, and old inflammatory cases in which tubes and ovaries are bound down in such dense adhesions that rejuvenation is impossible.

Kelly then proceeds to describe an operation which he has practiced at the Johns Hopkins Hospital, and which he has demonstrated in upwards of two hundred cases within the past two years. The great value of this operation is its rapidity, saving from sixty to eighty per cent. of the time consumed in enucleation, and its method of dealing with certain serious complications. The operation consists in the following steps:

1. Opening the abdomen.
2. Ligation of the ovarian vessels near the pelvic brim, either on the right or on the left side, clamping them towards the uterus, and cutting between.
3. Ligating the round ligament of the same side near the uterus, cutting it free, and connecting the two incisions, in order to open up the top of the broad ligament.
4. Incision through the vesico-uterine peritoneum from the severed round ligament across to its fellow, freeing the bladder, which is now pushed down with a sponge, so as to expose the supra-vaginal cervix.
5. Pulling the body of the uterus to the opposite side to expose the uterine artery low down on the side opened up. The vaginal portion of the cervix is located with

thumb and forefinger, and the uterine artery, seen or felt, is tied just where it leaves the uterus. It is not always necessary to tie the veins.

6. The cervix is now cut completely across just above the vaginal vault, severing the body of the uterus from the cervical stump, which is left below to close the vault.

7. As the last fibres of the cervix are severed or pulled apart, while the body of the uterus is being drawn up and rolled out in the opposite direction, the other uterine artery comes into view and is caught with artery forceps about an inch above the cervical stump.

8. Rolling the uterine body still farther out, the right round ligament is clamped, and cut off, and lastly the ovarian vessels are clamped at the pelvic brim, and the removal of the whole mass, consisting of uterus, tubes and ovaries, is completed.

9. Ligatures are now applied in place of the forceps holding the uterine artery, round ligament, and ovarian vessels; if the surgeon prefers, these may be tied as they are exposed without using forceps.

10. After the enucleation the operation is now finished in the usual way—(*a*) by closing the cervical tissue over the cervical canal, and then, (*b*) by drawing the peritoneum of the anterior part of the pelvis (vesical peritoneum and anterior layers of broad ligaments) over the entire wound area, and attaching it to the posterior peritoneum by a continuous catgut suture.

The continuous transverse incision should always be started on the side where the ovarian vessels and the ovary and tube are most accessible. If the case is one of a fibroid uterus, and the tumors are developed under the pelvic peritoneum or in the broad ligament of one side, this side should be opened up last, from below upwards, when the tumors can be rolled up and out with surprising facility.

Displaced ureters will not be injured, for on the side on which the enucleation is started such a ureter is pushed down with the loose peritoneum as the uterus and tumors are pulled up and towards the opposite side; and on the other side, no matter how much the ureter is displaced out of the pelvis, as the tumors caught from below are rolled up and out, the ureter drops down with the peritoneum and cellular tissue to the pelvic floor, and the operator need not even see it or be aware of its displacement, to avoid the risk of injuring it.

If the ureter is found to be displaced only on one side, the operation should begin on the opposite side.

To escape the danger of tying the ureter on the side on which the uterine artery is caught after dividing the cervix, Kelly is careful to put the forceps on the artery well above the cervical stump and to tie there.

The abdominal incision is always closed without drainage, by using a continuous catgut suture for the peritoneum, interrupted silver wire sutures for the fascia, a buried continuous catgut suture for the subcutaneous fat, and the subcuticular catgut suture for the skin.

The important points accomplished by this method of operating are (*a*) the great saving of time, and (*b*) the simple way in which certain serious complications are met.

Two kinds of complications are met with: first, fibroid tumors located under the peritoneum of the pelvic floor; and, second, inflammatory masses situated behind the broad ligaments, with dense adhesions to the pelvic peritoneum, to the rectum, and often to the small intestines.

In the case of the subpelvic peritoneal fibroids, it is astonishing how difficult they are to get at from above, and how easily on the other hand they roll out when handled from beneath by this procedure.

The same may be said of the inflammatory cases. Matted masses adherent in all directions, which resist enucleation from above, are often removed with ease when rolled up from the pelvic floor from below. The adherent structures seem to be unrolled in a natural and easy way, in surprising contrast to the difficulties experienced, and the injuries inflicted, in gaining the slightest finger-hold in proceeding from above.

To recapitulate: Abdominal hysterectomy by the continuous incision down through one broad ligament, across cervix, and up through the other broad ligament, is contrasted with hysterectomy by an incision down to the cervix through one broad ligament, and then down through the other, followed by amputation of the cervix.

The special advantages offered by this method of operating are:

1. The saving of from sixty to eighty per cent. of the time in the enucleating stage of operation.

2. The ease with which intra-ligamentary myomata and myomata beneath the pelvic peritoneum may be enucleated.

3. The ease with which inflammatory masses

posterior to the broad ligament may be enucleated by attacking them from below after dividing the cervix.

4. The control of a displaced ureter, on the side last opened up, keeping it out of the way of injury by the simple mechanism of the operation.

CATGUT STERILIZATION BY A NEW PROCESS.

SAUL (*Berl. Klin. Woch.*, Jan. 13, 1896) was led to study experimentally a process by which catgut could be rapidly and certainly rendered sterile without destroying any of its valuable characteristics.

Basing his research upon the work of Répin and others, he studied the effect of boiling alcohol in different concentrations and with the admixture of other ingredients, desiring to lower the boiling-point and shorten the time required for complete and certain sterilization. After testing various mixtures he finally determined, by exhaustive experiment, that the following mixture produces the most certain results in the minimum amount of time:

Alcohol (ethyl alcohol), 85 parts;
Liquid carbolic acid, 5 parts;
Distilled water, 10 parts.

An apparatus is requisite which maintains the solution in its original concentration and prevents excessive pressure, while keeping the boiling-point at the same degree of temperature.

Catgut, when boiled in this solution for fifteen minutes, is absolutely sterile and its quality is uninjured. Experiment has shown that five minutes' boiling is sufficient to destroy the spores of anthrax. The catgut may be used immediately after sterilization.—*International Medical Magazine*, May, 1896.

PRIMARY TUBERCULOSIS OF THE KIDNEY.

HAMILL (*International Medical Magazine*, vol. v, No. 2, 1896) briefly relates the results obtained in seventeen cases upon which operations were performed. Nephrotomy was done four times, with two recoveries, one improvement, and one death. Nephrectomy was done nine times, with five recoveries, one improvement (died later from perforation of the duodenum), and three deaths from the effect of operation. Nephrotomy followed by nephrectomy was resorted to in four cases; two recovered, one died, and one improved.

All of these operative cases were very far advanced, and were, therefore, not good cases. Of the two nephrotomies that recovered, one had pyelitis and peri-nephritic abscess, and the other abscess of the kidney. Of the cases of nephrectomy which recovered, in one the kidney was a loculated sac containing foul-smelling pus, in two others the kidney was enlarged, peri-renal abscess existed in one, and in one the kidney was not described. In the case which died from perforation of the duodenum, a large peri-nephritic abscess was first opened, and, later, a cystic kidney removed. Marked improvement had occurred in this case.

Of the two cases of nephrotomy followed by nephrectomy which recovered, one had peri-renal abscess and abscess of the kidney. In the other case the lad's condition was miserable: a perineal section was first resorted to for the relief of a tuberculous cystitis; later, nephrotomy was done to relieve a pyonephrosis. Marked improvement resulted, and finally the kidney was resected. The boy recovered, with the urine clear.

INTRA-VENOUS INJECTIONS OF SERUM IN SEPTIC PERITONITIS.

MICHAUD (*Le Progrès Méd.*, No. 2, 1896) gives fifteen cases in which this treatment was adopted, all in septic peritonitis following operation. Of these, five recovered. In one case, the patient being in imminent danger, 1000 grammes of artificial serum at 39° C. were injected, with the effect of immediate rise of temperature four degrees, and a slowing of the pulse. The serum was used during three days, at the end of which time the patient was out of danger and recovered. A similar result was obtained after ablation of the Fallopian tubes, where several injections were used, together with irrigation of the peritoneum. The artificial serum of Hayem, or simply sterilized saline water, was used. Various accidents were noted—vomiting, pain in the side, plethora, and disturbance of the cerebral circulation. No later complications were observed. The method is excellent, but other means—drainage, irrigation, reopening of the abdominal incision, and the free local application of ice—are to be used concurrently. Monod has had seven similar cases, with three recoveries. The effects were beneficial, even in the cases which ultimately terminated fatally. —*Quarterly Medical Journal*, vol. iv, part iii, 1896.

THE TREATMENT OF ANGEIO-CHOLITIS AND CHOLECYSTITIS OF INFECTIOUS ORIGIN.

TERRIER (*Revue de Chirurgie*, December, 1895), after a critical discussion of the different modes of treatment employed for these conditions, and a careful study of the best methods of procedure, summarizes his views in regard to treatment as follows:

1. Where the biliary ducts are the seat of an inflammation which produces intense febrile symptoms (either with or without the presence of calculi) which are continuous or subject to exacerbations, there is an absolute indication for surgical intervention by laparotomy.

2. This laparotomy should have for its object the opening of the gall-bladder and the permanent establishment of a biliary fistula—that is, it should be a cholecystotomy.

3. The results produced by this operation ere: a clear understanding of the condition present in the accessory bile-ducts (the cystic and vesicular); the principal bile-duct (ductus choledochus) can be explored; free exit is given to the septic bile contained in the bile-ducts and infecting from thence the entire system.

4. This free exit for the septic bile produces, in a certain indirect and mechanical manner, the disinfection of the bile-ducts, and one that is much better than that secured by purely medicinal methods of treatment.—*International Medical Magazine*, May, 1896.

Reviews.

A MANUAL OF OBSTETRICS. By W. A. Newman Dorland, A.M., M.D. Illustrated.
Philadelphia: W. B. Saunders, 1896.

Dr. Dorland has set himself the difficult task of writing another book of nearly 800 pages upon so important a subject as Obstetrics, when the books already published upon this topic are extraordinarily good and many of them very popular; but he has had the advantage as an author of having taught obstetrics for a number of years and therefore of knowing the wants of the ordinary medical student.

An examination of the text indicates the fact that Dr. Dorland has not attempted—as, indeed, how could he?—to write a book which would deal with obstetrics in a particularly original manner. On the other hand, his manual is evidently largely a compilation, and as such perhaps presents more of value to the student than if the author had attempted to give original ideas.

The book is copiously illustrated, and, as a rule, the illustrations are very good in selection and certainly in execution, as would be expected from the fact that they are chiefly from drawings made by Dr. Dickinson, of Brooklyn, that prince of medical draughtsmen, who drew most of the illustrations for the American Text-book of Obstetrics.

Very many of the pages of Dorland's book contain tables of differential diagnosis between conditions which may possibly be confused with one another by the student or inexperienced practitioner, and other tables are given which group together certain of the statements that are naturally somewhat scattered through the text.

The book is well printed and bound, and, unless it is crowded aside by the large number of competitors which it must meet, will probably prove most popular in the hands of medical students.

PRACTICAL POINTS IN NURSING, FOR NURSES IN PRIVATE PRACTICE: With an Appendix containing Rules for Feeding the Sick, Recipes, etc., etc. By Emily A. M. Stoney.
Philadelphia: W. B. Saunders, 1896.

When the reviewer first took up this book he wondered what possible excuse there could be for the publication of another book designed for the information of nurses, and when he put it down he had reached the conclusion that, however valuable other books might be, this one could be cordially recommended to the class of persons for which it was written, because of its clearness, its conciseness, and, as a rule, the very good illustrations which it contains.

The first part consists in a discussion of the nurse, her qualifications, responsibilities, and duties; the second discusses the sick-room; the third, the patient in medical and surgical cases, accidents, and emergencies. Then follow points upon nursing in special cases and the nursing of sick children. Following this are chapters upon the physiology and descriptive anatomy of various organs of the human body of both sexes in health, and an appendix upon how to feed the sick and how to prepare certain articles of food.

Quite a number of tables of weights and measures and other interesting data are given, and the book closes with a dose list and a glossary of some ninety pages, which we think is unusually well gotten up, particularly

for the use of trained or even untrained nurses. We think we have said before that the fault, if any fault exists, with Mr. Saunders's books, is that they are over-illustrated, and as a confirmation of this we may point to the folded temperature chart of a case of typhoid fever which is attached to page 218: it certainly is not a typical chart of typhoid fever, nor would it give any useful information to the nurse. Quite a large number of the illustrations of this volume are taken from Thornton's Manual of Prescription-writing and the American Text-book of Obstetrics, or from other works which are published by Mr. Saunders.

There are few books intended for non-professional readers which can be so cordially endorsed by a medical journal as can this one.

THE STUDENTS' MEDICAL DICTIONARY: Including All the Words and Phrases Generally Used in Medicine, with their Proper Pronunciation and Definition. By George M. Gould, A.M., M.D. With elaborate tables. Tenth edition, rewritten and enlarged.
Philadelphia: P. Blakiston, Son & Co., 1896.

When any one produces a book which claims to be as accurate as Dr. Gould's dictionaries have usually proved to be, it behooves him to see to it that the statements in his preface and on his title page are as correct as those which follow in the text. We learn from the Preface to the Tenth Edition, as it is called, that the present volume is an entirely new one and destined to take the place of the New Dictionary and the Students' Medical Dictionary, the plates of which have been destroyed. But this volume, if it is an entirely new one, cannot be a tenth edition of Gould's Students' Medical Dictionary, which has already proved to be so popular. Neither does the present volume profess to be so complete as the Illustrated Medical Dictionary first issued by Dr. Gould in 1894; and we are told in the preface that when more complete information is desired than can be given in this volume it is to be sought for by the physician, the educated layman, the lawyer, and the student of the more highly specialized branches of medicine, in that Illustrated Dictionary. In other words, the author and publisher have evidently recognized the fact that, notwithstanding the great value of the larger volume, its cost is far beyond the means of the average purchaser of a medical dictionary; and they have desired to put upon the market something more complete than the Students' Medical Dictionary.

The present volume certainly is as great a credit to its author as the other dictionaries he has written. We have looked it through with very considerable interest in order to see how he has carried out the difficult task of expunging words, tables, and other material which he considers unnecessary for the smaller volume, and we think that much credit is deserved for the skillful pruning, although we have passed the point of being surprised at any additional evidence of Dr. Gould's literary activity.

TYPHOID FEVER, AND ITS ABORTIVE TREATMENT. By John Eliot Woodbridge, M.D.
Cleveland, Ohio: The Cleveland Medical Publishing Company, 1896.

The wide publicity given to the early articles of Dr. Woodbridge upon the so-called abortive treatment of typhoid fever has naturally attracted much attention to his method of treatment, which consists in the administration of various hepatic stimulants and so-called gastro-intestinal antiseptics. Many physicians are to-day carrying out the plan of treatment which he recommends, and quite a number of them have already reported their results, which are in most cases favorable. At the same time we cannot help feeling that, while there is much merit in such a treatment as is recommended by Dr. Woodbridge, there is no such thing as really aborting typhoid fever, and that the most we can do, by proper and efficient treatment, is to modify its severity. Typhoid-fever infection is like that of many other infectious diseases, and obtains its hold and produces its primary changes in the organs of the body for a considerable time before the patient comes into the physician's hands for treatment. Just as it has been found futile to excise a chancre for the purpose of aborting syphilis, so do we believe it is futile to administer drugs with the idea that we are aborting typhoid fever. At the same time the use of drugs designed to keep the bowels moderately open and fairly pure is of advantage, and in the hands of many practitioners a definitely outlined treatment such as that recommended by Dr. Woodbridge doubtless gives better results than would be obtained by the same number of physicians using the methods of treatment which they happen to individually think are best for their patients; for while in some cases better treatment than any routine method can be would be given, in other cases the choice of the individual physician would be far inferior to the method

recommended by a practitioner of so large an experience as the author of this volume.

The treatment which Dr. Woodbridge advises, it will be remembered, consists in the administration of three prescriptions. The so-called Formula No. 1 is composed of: podophyllin $\frac{1}{960}$ grain, mercurous chloride $\frac{1}{16}$ grain, guaiacol carbonate $\frac{1}{16}$ grain, menthol $\frac{1}{16}$ grain, and eucalyptol a sufficient quantity. This is to be made into one tablet, and one of these tablets is to be given every fifteen minutes during all of the wakeful hours for twenty-four or forty-eight hours. As little sleep is present in most cases, as many as eighty to one hundred tablets may be taken in a day. Each dose should be swallowed with a drink of sterilized water, and if necessary aided by some laxative or diuretic water. At the end of twenty-four to forty-eight hours No. 2 tablet is given, which consists in a modification of the ingredients already named by adding $\frac{1}{16}$ grain of thymol and increasing the carbonate of guaiacol to ¼ grain. One of these tablets is given every fifteen minutes, together with tablet No. 1, until five or six free evacuations have been produced. If the tablets of Formula No. 1 produce sufficient relaxation of the bowels, they may be discontinued and the No. 2 tablet alone administered for the second twenty-four hours. About the third or fourth day, Formula No. 3 is administered, which consists of thymol 1 grain, carbonate of guaiacol 3 grains, menthol ½ grain, eucalyptol 5 minims. One of these capsules is to be given every three hours until the temperature has been normal for at least three days. The administration of Formula No. 3 should not be allowed to interfere with the administration of Formula No. 2.

The volume embraces not only the author's exposition of his method, but writings of others who have employed the same. It is illustrated with a number of temperature charts and views of the intestinal lesions of typhoid fever and of the microscopic appearance of the malarial bodies, according to the drawings of Dr. Thin, which separate malarial fever from typhoid. The book is very well printed, but it is a pity that more careful proof-reading was not carried out.

SURGICAL PATHOLOGY AND THERAPEUTICS. By John Collins Warren, M. D. Illustrated.
Philadelphia: W. B. Saunders, 1895.

In the whole range of recent publications no work more creditable to both publisher and author is to be found. In the extremely modest preface it is stated that: "An attempt is made in this work to associate pathological conditions as closely as possible with the symptoms and treatment of surgical diseases, and to impress upon the student the value of these lines of study as a firm foundation for good clinical work." In this Dr. Warren has been eminently successful. The work throughout is characterized by clear, direct teaching, and by a careful selection from the vast masses of material of what is best, most thoroughly confirmed, and most helpful.

The first and second chapters are devoted to Bacteriology, with special reference to the surgical bacteria. Then follows the section upon Hyperemia, Simple and Infective Inflammation, and the Process of Repair. Shock is discussed in a particularly interesting and practical manner. Surgical fevers, the various forms of blood-poisoning, erysipelas and gangrene are each in turn considered. In the whole work there is probably no section more thoroughly satisfactory than that on Tuberculosis. The book closes with a chapter upon Aseptic Surgery.

AN INQUIRY INTO THE DIFFICULTIES ENCOUNTERED IN THE REDUCTION OF DISLOCATIONS OF THE HIP. By Oscar H. Allis. The Samuel D. Gross Prize Essay.
Philadelphia, 1896.

To this monograph was awarded the Samuel D. Gross Prize of one thousand dollars for the best original essay illustrative of some subject in surgical pathology or surgical practice, founded upon original investigations. Unlike the great majority of prize essays, it represents not an industrious compilation from the work of others, but an extremely ingenious series of anatomical studies and experiments conducted by the author himself. To summarise a work of this character in a review is impossible.

Perhaps no higher praise can be given the work than to say that it will add to the author's already wide reputation as an original thinker and experimenter; that it is destined to become a part of standard surgical literature; that its conclusions are those which will be delivered from every surgical chair in the world.

A MANUAL OF ANATOMY. By Irving S. Haynes, Ph.B., M.D. With 134 half-tone illustrations and forty-two diagrams.
Philadelphia: W. B. Saunders, 1896.

In looking over this book, the attention of the reader is chiefly attracted by the large number of very excellent original illustrations, the extremely ingenious diagrammatic represen-

tations of anatomical points which are thus impressed upon the memory, the condensed and accurate descriptions to be found in the reading matter, and the complete index. As to the exact place which the book should fill, this is hard to decide. It is not in itself sufficient for a text-book on anatomy, nor does the scope of the work admit of its being used as a complete dissector. Perhaps its most useful function will be to reinforce the standard works on the subject and to help the practical surgeon in his studies of regional anatomy.

With a few exceptions the illustrations are the best to be found in any anatomical work of corresponding size and price. We hope that it will meet with a favorable reception at the hands of general practitioners.

Correspondence.

LONDON LETTER.

By St. Clair Thomson, M.D., F.R.C.S., M.R.C.P.

The holidays will soon be upon us. Let me direct attention to a most interesting article in the *National Review*, by Dr. Louis Robinson, on "The Science of Change of Air." We all know how difficult it is to explain the beneficial effects of simply a change of residence. Chemistry is unable to detect appreciable differences in the atmosphere of two neighboring cities, one of which may be "bracing" while the other is "relaxing." The climate which is found invigorating by one individual is reported to be enervating by another. Dr. Robinson suggests that in some way the influence may be attributed to the micro-organisms which inhabit us and our surroundings, and to the way they may affect us in varying circumstances. He also thinks that the emanations from vegetation, and invisible carbon compounds or other vaporized substances which we are constantly inspiring, must account for the exhilarating or depressing influences experienced in different localities. Mere change—not necessarily to a more salubrious location—is in itself so frequently beneficial that the possible explanation offered by Dr. Robinson must be of interest. He suggests that man was so long a wanderer on the face of the earth, constantly shifting his quarters to hunt for food, escape from pestilence, or pursue or avoid his enemies, that we are still stamped with this nomadic tendency, and that it shows itself at times in this craving for change of air. He points for confirmatory evidence to the remarkable healthiness of gypsy children, and states that it is well known that in the case of the lower animals the inhabitants of a traveling menagerie are much healthier than those of the zoölogical gardens where they have every care and attention that science can suggest. Personally, and from some experience of health resorts and some study of climatology, I am inclined to ascribe a very large part of the benefit of change of air to what is called the "mental effect"—the absence of tension and anxiety, and the change (if not absence) of responsibility. The Romans wisely inscribed over the portals of one of their baths: "*Curarum vacuus hunc adeas locum, ut morbum vacuus abire queas; non curatur qui curat.*"*

Dr. Louis Robinson has shown in a previous article how marked in us are the traces of our "arboreal ancestors." I refer to his observations that a baby will not only instinctively clutch hold of a stick placed between its fingers, but will sometimes even hold on with such tenacity as to allow itself to be lifted from its cot and still hang on some time before it will let go. This, it should be noticed, is at an age long before the infant's little legs are strong enough to support it. Although we may all agree with Tennyson to cry:

> "Move upward, working out the beast,
> And let the ape and tiger die,"

yet we must acknowledge from Dr. Robinson's explanations that many of our ways are strongly suggestive of our hairy ancestors.

A view of the holiday question which has been hardly enough insisted upon is well brought out in a leading article in the *Medical Press*. It is, in fact, that holiday-taking is becoming to a great extent a craze, and that it is now a mere fashion for people to say they are always requiring a holiday, or "a change," or a "week off," or a "day out." Long holidays are only too apt to go on to mere idleness and weariness, while the shorter ones, consisting of hurried rushes in and out of town, lead in many cases to feverishness and unrest. As an alternative the *Medical Press* suggests that "short holidays two or three times a year are probably of more use than one long one, while, if the week-ends

* "You may approach this place free of cares, that you may seek to depart free of diseases; it makes no difference who the sufferer may be."

are often spent out of town, less than that is enough. The constant wish to get away from work, which is so characteristic of the present day, indicates little love of it, and that little love betokens degeneracy." This craze for holidays is not limited to the well-to-do classes of society; every shop-boy now saves up his money to buy a "bike," and his object out of shop hours is to get as far into the country as he can in the time, no matter at what expenditure of exertion; or else his earnings are spent on a holiday on the Continent from which he returns worn out, dazed with the variety of scenes he has rushed through in order to "see as much as he can for his money," and with the necessity of remaining cooped up in the city until he can save up enough to repeat the same "pleasure excursion" (!) another year. I was recently asked by a hospital out-patient to order him enough medicine for three weeks—instead of the usual fortnight,—as he was going to Norway for his summer holiday!

Our medical societies have closed their doors until the autumn, but we have sufficient interest for the moment in the number of important books recently published. First amongst these comes "A System of Medicine, by Many Writers," and edited by Clifford Allbutt, Professor of Physic in the University of Cambridge. This work is to be completed in six volumes, four being devoted to internal medicine, and two to diseases of women. The first volume has just been published and contains every promise of our having a work worthy of the present standard of medicine. Over forty different writers have contributed to the present volume. They are not all British, for the States are represented by Dr. John S. Billings on Medical Statistics, Dr. John K. Mitchell on Massage, and Dr. Frank Fairchild Wesbrook. The book is sure to be fully and widely reviewed; I need therefore only say that a short study of it is sufficient to show that it is not simply an encyclopedia of heaped-together brochures, but a reasonable and readable series of chapters on the science and art of healing. The chapter on Nursing has been contributed by a lady superintendent of nurses, who was asked by the editor to write the article "in order that medical men may know what to expect of their nurses—not that I for a moment suppose any of my readers to be unfamiliar with the smallest of these bedside services." It is therefore interesting to give the following quotation from the opening sentences of this article:

> Order, method, punctuality, obedience, are part of the groundwork of a training school; but to these must be added thoroughness, promptness, accuracy in observing, and correctness in reporting observations, and a loyal attitude towards doctors and patients. The whole art of trained nursing depends upon the maintenance of this attitude. Nurses are bound, by their very position, to render loyal obedience to medical men. It is not their duty to suggest or initiate treatment of any kind, except by express permission or in some sudden emergency. They have no responsibility whatever save that of faithfully obeying orders, and the higher the discipline the more readily this is recognized. With regard to patients, the gravest fault, short of negligence, is love of gossip, personal or professional. To talk to patients about their ailments and treatment, to describe other cases to them, to indulge them in medical histories, and to discuss the comparative merits of medical men, work infinite harm, especially to those of nervous temperament who are chiefly disposed to seek such confidences. It is true a nurse is often at a loss to interest her patients; but to gratify unwholesome curiosity, to criticise methods of treatment, or to reveal private affairs learned in the course of her profession, is most reprehensible.

Some six months ago I noticed the issue of the first volume of "A System of Surgery" edited by Frederick Treves. The second and concluding volume has just been completed, and the high reputation of the editor is sure to draw general attention to the production. Considering the rapid progress of surgery, it is a comfort to find that the editor has kept this system within the bounds of two volumes, otherwise the contents of the first volume would be ancient history before one had read to the end of the sixth—presuming any surgical work would now-a-days run to such lengths! Mr. Treves's own contributions are, it need hardly be said, amongst the most valuable of the contents, and the illustrations reach a higher range of quality than I remember to have seen for some time.

In my last letter I spoke of Dr. Ransome's book on "The Treatment of Phthisis," and I have since noticed that many reviewers have shared my appreciation of this eminently practical work. I think that every one who has to treat the consumptive—and how few are not called upon to do so!—should carefully study this suggestive volume. The author is a believer in the curability of phthisis, and where we cannot bring about a cure these chapters will certainly aid us to smooth life's stormy passage to the grave. To those who look upon light and air as two of nature's chief scourges, the following quotation is commended:

> Fresh air, day and night, must be admitted to all living-rooms and bed-rooms; and the present foolish dread of what is called "night-air" must be overcome. Light, too, which is now often excluded from a fear of spoiling the furniture, etc., must be admitted as freely as possible, and must come to be regarded as—what it indeed is—nature's best gift for the prevention of disease.

Turning for a moment to our Continental colleagues: I have just received from Professor Politzer a copy of his remarkable work recently published, "Atlas der Beleuchtungsbilder des Trommelfells." This is not simply an atlas, but a complete work on the drum of the ear, its morphology, pathological anatomy, and its condition in every form of middle-ear affection; it is illustrated by sixty-seven engravings, and at the end of the volume is the most wonderful collection of 392 chromo-lithographs of the membrana tympani, life-size, and drawn from nature by the Professor himself. Every visitor to Vienna knows that Professor Politzer's learning and scientific knowledge are only equaled by his artistic capacity. This atlas is therefore drawn by an artist's hand from a scientist's observations; I have no hesitation in saying that nothing of the kind has ever even approached this work, and it is anything but likely that such a rare combination of qualities will occur readily again. I must confess to a certain dubiousness with regard to the value of colored illustrations of the throat or ear; to the expert they are insufficient, and to the beginner they are apt to be misleading. With regard to Politzer's Atlas I have no such questionings. To the aurist it is a perfect treat to examine it; and to any one who wishes to study the ear privately it can be strongly commended, as the number and variety of illustrations prevent a too limited idea of any one condition, while each picture is scientifically exact and artistically exquisite.

In my June letter I was tempted to wander from the medical into the general book-world and to give some quotations anent our profession from Professor Lecky's recent work on "Democracy and Liberty." In dealing with the enfranchisement of women he thus refers to their part in the anti-vivisection craze:

> Women, and especially unmarried women, are, on the whole, more impulsive and emotional than men; more easily induced to gratify an undisciplined or misplaced compassion, to the neglect of the larger and more permanent interests of society; more apt to dwell upon the proximate than the more distant results; more subject to fanaticisms, which often acquire almost the intensity of monomania. We have had a melancholy example of this in the attitude assumed of late years by a large class of educated Englishwomen on the subject of vivisection. That a practice which may be and has been gravely abused is properly subject to legislative control will probably be very generally admitted. But it would be difficult to conceive an act of greater folly or wickedness than to prohibit absolutely the most efficient of all methods of tracing the origin, course, and filiation of disease, the only safe way of testing the efficacy of possible preventives and remedies which may either prove fatal or be of inestimable benefit to mankind. What tyrant could inflict a greater curse upon his kind than deliberately to shut it out from the best chance of preventing, alleviating, or curing masses of human suffering, the magnitude and poignancy of which it is impossible for imagination adequately to conceive? What folly could be greater than to do this in a country where experiments on animals are so guarded and limited by law that they undoubtedly inflict far less suffering in the space of a year than field sports in the space of a day?
>
> The spectacle of great numbers of most humane and excellent women taking up such a cause with a passion that would undoubtedly lead them, if they possessed political power, to subordinate to it all the great interests of party or national welfare, has probably done as much as any other single thing to shake the confidence of cool observers in the political capacities of women. It is true that they are not alone in their crusade, but it is only necessary to look down any annual list of subscriptions in such societies to perceive how enormously the female element preponderates. In the administration of justice; in measures relating to distress and poverty that may be mainly due to improvidence or vice; in all questions of peace and war—such a spirit would prove most dangerous. There have been ages in which insensibility to suffering was the prevailing vice of public opinion. In our own there is, perhaps, more to be feared from wild gusts of unreasoning, uncalculating, hysterical emotion. "Les races," as Buffon said, "se feminisent." A due sense of the proportion of things; an adequate subordination of impulse to reason; an habitual regard to the ultimate and distant consequences of political measures; a sound, sober, and unexaggerated judgment, are elements which already are lamentably wanting in political life, and female influence would certainly not tend to increase them.

Although, as I have said, our medical societies are in the condition of Italian theatrical companies who announce that there will be no performance by a card hung outside with "Riposo" on it, we have still before us the biggest "palaver meeting" of the year. I refer to the annual gathering of the British Medical Association in Carlisle from the 28th to the 31st of July. Visitors had been looking forward to some lively scenes in the recently constituted Section of Ethics, as Mr. Lawson Tait had offered a paper on "The Ethics of Advertising, Illustrated by the Manners and Customs of the Editor of the *British Medical Journal*"! The paper, however, has been declined, and Mr. Tait writes to the papers promising to print it "elsewhere, where Mr. Hart may have his brittle nature less sedulously and unscrupulously protected." There are always rumors of "ructions" at the general meetings; but heretofore, so far as I can gather, they have never amounted to anything. I read that the Association is to be invited to meet in 1897 at Portsmouth; this would be likely in many ways to turn out a popular place of meeting; it is a prosperous town, sufficiently near London, convenient for foreign visitors, and near all our south-coast attractions.

A congress has been meeting in London, under the auspices of the British Association, and presided over by Sir Joseph Lister, with the purpose of considering the possibility of accomplishing the gigantic task of forming an international catalogue of scientific publications. The chairman reported their first deliberations to be "auspicious and encouraging." A congress such as this would have been incomplete without the presence of Dr. J. S. Billings, and I am glad to read that not only was he there, but in the relaxation from "congressing" he delivered himself of the after-dinner opinion that though progress at first would be slow, "nothing less than too much would be enough in the long run"!

A dispute has been going on for some time at the Liverpool Lying-in Hospital; it has been settled by "a complete victory all along the line for the doctors." It is, of course, much too local a question to interest the readers of the GAZETTE; but a serio-comic skit which appeared in the *Liverpool Review* of June 6 will give them an idea of the state of things which brought about the dispute, and is in itself so amusing that I give some extracts:

A DOCTORLESS HOSPITAL.

PROSPECTUS.

The List opens to-morrow and will close on the 1st of April next. No promotion money. No underwriting. No humbug. No preference will be shown except to midwives. Doctors (sixpenny included), rigidly excluded.

A strong feeling having existed from time immemorial among midwives and old women that doctors should be abolished on the ground that those who superintend the arrival of passengers on this planet are quite capable of superintending the exit as well, it is proposed to start a new parent company to acquire and work, free from medical and surgical control, a number of Lying-in Hospitals throughout the country.

. . . . . .

GENERAL MANAGER: THE MATRON MIDWIFE.
CONSULTING ENGINEER: THE MATRON MIDWIFE.
SECRETARY, PRO TEM.: THE MATRON MIDWIFE.

In order to ensure absolute freedom to the patients and the matron midwife from the inhumanity of the medical profession, and the continuous annoyance arising from new and improved methods of treatment, the directors and the matron midwife have decided to open a Marine Lying-in or Laying-out Hospital and Sanatorium, on the most insalubrious portion of the Manchester Ship Canal. Any temporary rise in the death-rate will be compensated for by the certain absence of the medical profession.

. . . . . .

Any qualified man found prowling within five miles of the doctorless hospitals of the company will be arrested and dealt with as the Matron Midwife Commanding-in-Chief shall direct. Medical students caught poaching in the grounds will be summarily executed on the spot.

. . . . . .

Any news-agent, porter, messenger, street arab, or other person found introducing *The Lancet*, or any other medical paper, periodical or book containing up-to-date professional literature, into the company's doctorless hospitals, either on land or water, will be carried before the Matron Midwife Commanding-in-Chief and incontinently birched or lashed at her discretion.

Any director presuming to differ from the matron-midwife upon any point will be permitted to resign upon getting a written order from the matron-midwife.

. . . . . .

Intending patients must give notice at least twelve months in advance to the matron-midwife, of their intention to avail themselves of the place. In order to prevent mistakes in delivery of parcels, husbands are advised to have their wives photographed prior to despatching them to the company's doctorless hospitals, as the hospital will not hold itself responsible for errors in packing and transit.

Patients who have been seen by qualified doctors during the five years immediately preceding admission into the company's doctorless hospitals must sign a renunciation in the presence of the matron-midwife.

Patients who presume to expedite matters with undue precipitancy without consulting the matron-midwife will be expelled.

. . . . . .

Each matron-midwife appointed by the directors of this company shall assume the courtesy title of doctor, and as many other titles as appeareth good in her sight. Each director may assume the style and title of matron-midwife if so inclined, and strive to live up to it.

. . . . . .

Dying is strictly prohibited in all the doctorless hospitals of this company, and any patient suspected of a tendency to bring the hospital into disrepute by so mean an act will be summarily ejected.

Although dying on the company's premises is rigorously discountenanced, the directors do not wish to be harsh, and on application to the Matron Midwife Commanding-in-Chief, printed application for leave to die at home or in the gutter may be obtained by delicate or perverse patients.

It must be understood that the decision of the matron-midwife is final and irrevocable in all things, and that the directors only act as her mouthpiece.

That cruelty is more frequently wrought by want of thought than want of heart is often shown by female fashions. This year, birds' feathers have been again in fashion for ornamenting ladies' hats, and the excuse has been given that the feathers were "not real." Sir W. H. Flower has written a letter to dispose of this subterfuge. He asserts that not only are the feathers in nearly every instance only too real, but that in many cases (particularly in that of the crest of the egret heron) they are obtained by wounding and maiming many birds during the hatching season, so that countless nestlings are left to starve. As the *British Medical Journal* remarks: "More suffering is produced to supply the bonnets for one garden party than in all the physiological laboratories of the world."

In the College of Surgeons in Ireland they have appointed a lady examiner. The students have protested and threaten to adopt the national institution of the "boycott."

The Council of the College cannot call upon the lady to resign, and they cannot remove her. Hence a dilemma.

Our ideas with regard to the mellowing effects of age on whiskey are disconcerted by a government analyst who states that it is a mistake to suppose that new spirits contain more fusel oil and are more unwholesome than old. Such a statement goes entirely in opposition to the results of empirical experience, and it is hardly likely at first sight that whiskey merchants would take the trouble to store whiskey for years unless they found that by so doing they diminished the amount of fusel oil in it and so improved the value of their merchandise.

It is said that juvenile drunkenness is increasing. There seems little doubt as to the spread of cigarette-smoking amidst the youthful population, and manufacturers are turning out "penny packets" of whiffs with the evident object of catering for boys.

A man who had been a "regular drunkard" had adopted the habit of forcing his wife to drink with him. In one of their bouts they quarreled, and—as brought in by the jury—the wife killed her husband. The medical evidence showed that the wounds on the deceased could not have been self-inflicted. However, a verdict of "Not guilty" was brought in, as it was held that the wife was not responsible for her actions owing to her intoxication. Hitherto in this country this plea has not been held to be sufficient.

Arrangements have been completed at Cambridge for "advanced students" which cannot fail to interest visitors from the other side. By these new regulations, courses of advanced study or research are open to those who have obtained a degree elsewhere, and this without following the usual course of lectures and examination required for the degrees of the University. Membership of certain colleges is also open to them without fulfilling the conditions imposed on junior students. These new regulations apply only to graduates of the British Empire, and, moreover, after a certain period of residence visitors can present themselves for the final examinations for degrees. Full particulars will be found in a pamphlet prepared by Dr. Donald McAlister, entitled "Advanced Study and Research at the University of Cambridge," and published by the Cambridge University Press.

Dr. Gowers objects to the manner in which druggists deface prescriptions by blotting them all over with the rubber stamps bearing their names. He says that if there is any call for such a practice the names should be affixed to the back of the paper, and not on the face of it so as to obscure the original writing. He also appeals against the habit of dispensers of altering the dose and simply entering the altered quantity with their initials.

A young woman has died after taking acetanilid for headache. She bought it from a local chemist under the title of "Daisy Headache Powders." At the inquest it was shown that the dose in various samples varied from 4 to 7½ grains. In defense it was urged that the Pharmacopœia stated the dose to vary from three to ten grains. However, the jury found that death had been caused by the powders and that there had been gross carelessness in making them up. It is to be hoped that this case will put the public on their guard against the cheap drug stores which have lately increased so much. In order to attract trade, these establishments are reported to sometimes make up a prescription at less than the prime cost of the ingredients—*i.e.*, supposing the ingredients used to be pure. Their other methods of "cutting" are too various to specify, but sufficiently suspicious to warrant all physicians in seeing that they get no encouragement, at least from the profession.

PARIS LETTER.

By Arthur R. Turner, M.D. (Paris).

It is at this period, towards the end of the scholastic year, that the theses are presented at the Faculty of Medicine. When the medical student has passed all his examinations, there remains this still: to write a thesis which must not contain, by custom, less than 10,000 words, on some subject in medicine or surgery, but which may in some cases attain six or seven hundred pages. This thesis must be signed, in manuscript form, by some professor of the Faculty, who agrees to act as president of the jury to whom the thesis will be submitted. Two hundred and forty francs (forty-eight dollars) are due as fees for graduation, and the manuscript accompanied by a receipt for the fees and a written agreement from the printer naming a date on which the copies printed by him can be delivered, must now be handed in to the Faculty of Medicine. In forty-eight hours the manuscript is returned, signed by the Dean of the Faculty and the Vice-Rector of

the Academy of Paris. Five days before the passing of the thesis, the copies required by the Faculty must be delivered. They are 180 in number, and are distributed among the professors of the Faculty, the various medical schools of France, and a number of foreign universities which in turn send their theses to the French universities. Throughout the scholastic year, theses are being passed at the rate of three or four a day, or even less, but at this moment fourteen, fifteen, or even more are taken daily, so that the same jury at times hears several in succession.

When the appointed day has come, the candidate enters the robing-room of the Faculty, where he first pays five francs (one dollar) as "*droits de robe*," and usually an equal sum as a fee for the attendant. He is made to assume a long black stuff gown, with long hanging sleeves, and a white band around the neck, falling upon the breast. When the jury, composed of three professors or assistant-professors, not counting the President, are assembled, an attendant conducts the candidate before them. He is seated upon a bench in front of them, and each of the jury, in turn, criticises the thesis and interrogates the candidate on its contents.

It may be said that the greatest variety exists as to the value of the theses where every student is obliged to hand one in. Some are but compilations, or, at best, add an unpublished observation or two, supplied to the author by some physician or surgeon of the hospitals, in whose service the former has been. Other theses are in reality important works, which are not only printed for the Faculty's use, but are published in another form as medical works.

When the members of the jury have completed their quizzing, they allow the candidate and any strangers present to withdraw, and deliberate on the vote to be given, which may be: *passable*, *assez bien*, *bien*, *très-bien*, or *extrêmement-bien*.

Exceedingly rarely is a thesis refused. In the first place, the jury know well enough that a good practitioner may be a very poor writer; and secondly, no thesis would be signed as a manuscript were it decidedly too feeble.

The decision of the jury is announced by an usher from the stone steps of the robing-room leading into the Court.

Dr. Widal, who has published several contributions on bacteriology in collaboration with Dr. Chantemesse, recently reported to the Société Médicale des Hôpitaux a new method of diagnosis of enteric fever. This method is founded on the property possessed by the blood-serum of patients suffering from that disease of bringing about a certain transformation in cultures of the bacillus of Eberth.

A small quantity of blood is withdrawn from one of the veins and allowed to coagulate. One part of the serum is added to ten to fifteen parts of bouillon-culture, and the tube is left in the incubator at 37° C. for twenty-four hours. Examined with the naked eye, the tube is seen to contain a whitish dust suspended throughout the liquid. This is a fine precipitate formed by the agglutinated bodies of the bacilli of Eberth, as may be seen by the microscope. The serum obtained from the blood of healthy individuals or of patients suffering from other affections does not give such a reaction.

One of the most promising of the younger medical men of France, Dr. Girode, who, with Dr. Brourardel and Dr. Gilbert, edited a new treatise on Medicine now in course of publication, has recently died of tuberculosis. It is but a little over two years since he was named physician of the hospitals, and he was universally looked upon as destined to a brilliant career.

Dr. Gills, of Briançon, reported to the Société de Thérapeutique of Paris that he succeeded in rapidly relieving toothache due to dental caries by means of the following antiseptic solution, with which the mouth was to be washed out four or five times:

Boiled hot water, 4 parts;
Van Swieten's solution, 1 part;
Any tooth-wash, q. s. to correct taste.

AN UNUSUAL CASE OF ACUTE LEAD-POISONING FROM TEA-DRINKING.

To the Editor of the THERAPEUTIC GAZETTE.

DEAR SIR:—Mrs. R., residing at Randwick, a suburb of Sydney, purchased a packet of cheap tea on the morning of July 10, 1895. At dinner, in the middle of the day, she, her daughter and her niece partook of a weak decoction prepared from this. Shortly afterwards all three complained of dryness of the mouth and throat and great thirst, which passed off during the afternoon.

A portion of the contents of the same package was given to Mrs. W., a neighbor, who made a strong decoction, which she, her husband, mother-in-law and son drank about 5.30 P.M. on the same day. Between 6.15

and 6.30 they all complained of dryness of the mouth and throat, dizziness in the head, and loss of power in the lower limbs.

I saw the family about 10.30 P.M. Mrs. W. senior (aged eighty-six) complained of dizziness in the head, cramps in the lower part of the abdomen, and coldness of the extremities; she was unable to swallow or to void urine; she had not vomited.

The younger Mrs. W.'s face was flushed, she had an anxious expression of countenance, a shuffling gait, and was almost unable to walk, her extremities were cold, and her pupils were widely dilated. She complained of thirst and dryness of the mouth and throat, and had vomited freely.

Mr. W. (husband of the last) had gone out of the house some time before my arrival, but had complained of dryness of the throat before leaving.

The son of the last-named complained of dizziness in the head and pain in eyes, with indistinctness of vision; pupils widely dilated. He had vomited freely.

Miss W. (daughter), the only person in the house who had not drunk any of the tea, did not suffer at all. She had partaken of all the other articles of food on the table.

July 11, 11.30 A.M.: Mrs. W. and her husband are still unable to walk, though feeling better; indistinctness of vision still strongly marked; extremities cold. Ordered an ounce of castor oil to each, and also hot bottles to feet, etc. Mrs. W. senior much improved; Mr. W. junior quite well.

I procured some of the tea from the package and submitted it to the Board of Health for analysis. I advised the grocer from whom it had been purchased not to sell any more of the same parcel until the result of the analysis should be made known.

July 17: The Secretary of the Board of Health informs us by letter that the sample of tea has been analyzed and found to be "contaminated with metallic lead, together with minute traces of manganese and zinc."

There can be little doubt that the symptoms presented by these persons were those of acute lead poisoning, but how the metallic lead in the tea caused the symptoms in so short a time I am still unable to say. Perhaps there is some substance in the Sydney drinking-water which, when heated, is capable of forming a soluble salt of lead. I, however, have never heard of such a case before. Yours very faithfully,

GEORGE LANE MULLINS, M.A., M.D.

SYDNEY, N. S. WALES.

"*CHELSEA PENSIONER.*"

To the Editor of the THERAPEUTIC GAZETTE:

SIR:—Your article anent the Chelsea Pensioner in the GAZETTE for July, 1896, giving a formula and requesting reliable information as to the original formula, attracted my attention. Allow me to say that I have used the subjoined formula with a fair share of success for forty-five years. I was indebted for it to Wood's edition of J. A. Paris's Pharmacologia, edited by Ansel M. Iris in 1825. It is:

℞ Gum guaiac, ʒ j;
Pulv. rhei, ʒ ij;
Potassii bitartrat., ℥ j;
Sulphur lotum, ℥ j;
Nutmeg, 1;
Clarified honey, O j.

The dose is a large tablespoonful night and morning. This is the original, no doubt, given by a Chelsea pensioner to Lord Amherst, who was cured thereby, so Paris states; and if it cured a lord, why may it not cure an American king?

Trusting the best of American medical monthlies, the GAZETTE, will continue to grow in favor, I remain,

Yours truly,

W. W. D. PARSONS.

AMESVILLE, N. Y.

PROMPT EFFECT OF BORIC ACID.

To the Editors of the THERAPEUTIC GAZETTE.

GENTLEMEN: I send the following report because it so admirably shows the powerful disinfectant action exerted on the urine by boric acid taken by the mouth.

The patient, a dental student, gave a history of having contracted gonorrhea one year before I saw him. For this he took very irregular treatment until about three months ago, when he consulted a physician, who informed him that he had a stricture and passed sounds. Following this the patient suffered from severe chills and urethral fever. This discouraged him from further instrumentation. When I first saw him I procured a specimen of his urine and set it aside. In a few hours it was decomposed and strongly ammoniacal. Boric acid was then given in ten-grain doses. The next specimen of urine, passed the following morning, remained perfectly fresh for seventy-two hours. Moreover, instrumentation produced no further chill. Very truly yours,

C. BURTON CONNER, M.D.

BOSTON, MASS.

—THE—

Therapeutic Gazette.

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Original Communications.

*SOME THOUGHTS CONCERNING DISEASE AND RECOVERY, IN THEIR RELATION TO THERAPEUTICS.**

BY SOLOMON SOLIS COHEN, M.D.,
Professor of Clinical Medicine and Therapeutics in the Philadelphia Polyclinic; Lecturer on Clinical Medicine in Jefferson Medical College; Physician to the Philadelphia and Rush Hospitals, etc.

MR. PRESIDENT AND MEMBERS OF THE MEDICAL AND CHIRURGICAL FACULTY: I thank you for your kind reception and for the honor which you have done me in asking me to address you upon this occasion. The comparatively brief period which has elapsed since I received your kind invitation has been unfortunately much encroached upon by college work, and especially the exhausting tedium of examinations, so that I have been compelled to set down hurriedly the thoughts I have wished to lay before you, and have lacked time to trim away redundancies and repetitions, supply omissions, or endeavor to impart rhetorical polish. Thus, from lack of opportunity to condense, that which was intended as an exordium has grown into a discourse, and I shall have to content myself with but a fragmentary presentation of the important practical applications of the prin-

*The Annual Oration delivered before the Medical and Chirurgical Faculty of Maryland, at their ninety-eighth annual meeting, April 30, 1896.

ciples sought to be explicated. Some of the difficulties experienced in finding words and phrases that should embody in a definite and intelligible form the views I desire to submit for your consideration, are due to my own inadequacy; but at least a part of the defects and imperfections of the address may, I trust, be generously attributed to the fact that the present state of knowledge in medicine and collateral sciences does not furnish us with exact and definite words and phrases for the fundamental factors of many of the most important pathologic and therapeutic processes; or in other words, while in certain trains of observation and induction the first and last terms have been established with a reasonable degree of certainty, intermediate terms are still in doubt and obscurity.

A great authority has defined medicine as "a science that aims at the preservation of health, the cure of diseases, and the physical perfection of man." Exception may well be taken to the use here made of the word "cure;" but we shall all agree, I doubt not, that in the description of the aims of our science, the preservation of health—which is as much more than the prevention of disease as a positive aim is always more than a merely negative one—rightly occupies the first place. I have never admitted the correctness of that classification or nomenclature which separates prophylaxis from therapeusis, hygiene from treatment. If, therefore, in treating of some of the relations of the therapeutic art with the fundamental sciences medical and general, and especially with the science of biology, I shall speak little of the preventive and preservative measures which are so distinctly the highest achievements of our science and art, in ancient or in modern times, it is because the principles of prophylaxis and of hygiene are so well recognized that it is unnecessary to dilate upon them; while that for which I shall plead is the formal recognition of like principles and their extension into the study and into the practice of that branch of our science and art to which the name of therapeutics is commonly but erroneously restricted—the management of the sick.

This phrase, the management of the sick, or, as Bigelow puts it, "the safe conduct of the sick," embodies an idea worthy of some elaboration in our present discussion. The ordinary definition of therapeutics as the "healing art" or the "art of treating disease" implies not only the error already reprobated (that the preservation of health is foreign to its scope), but still further restricts, and in restricting misdescribes, the therapeutic aim and method. If healing were always, or under well defined conditions, the work of art, and not, as we well know, the work of nature, we might speak of an art of healing; or if disease were an entity, a something existing independently of the powers and operations of the organism in which it is manifested, we might speak of "the treatment of disease." On the other hand, if nature's unaided efforts were always competent to effect recovery, there would be no need of any art or science of therapeutics apart from prophylaxis; and pathology might be studied as Faraday and our own Joseph Henry studied natural philosophy, simply for the enlargement of knowledge, without any thought of direct practical application. It is often necessary, however, for art to come to nature's aid, and to endeavor so to manage the organism, the subject of disease—in other words the sick person—that recovery may be surely and completely effected; and this requires of pathology that it shall discover the processes and results of disease and the processes and results of natural recovery, in order that art may be intelligently guided. But the intelligent guidance of art implies yet more than knowledge; it implies the analysis of observed facts and their reduction to definite and simple principles, which shall be applicable when mere experience fails, and which shall serve as a guide to unceasing progress. Recognizing thoroughly the imperfections of our knowledge, and the limitations of our art, it may nevertheless be asserted that the practice of medicine, notwithstanding the apparent complexity of the problems at times presented to it, is susceptible of being so reduced to definite and simple principles; or perhaps it would be still better to say that it has been in great degree reduced to such principles, that these principles have in the main been taught by all the great leaders of medical thought throughout medical history, and that their amplification or correction in accordance with modern progress, their coördination with the mass of contemporary knowledge, has been partially effected; the results waiting only for formal recognition, promulgation, and acceptance. Such formulation is beyond the ambition of this address; but I shall try to indicate some of the lines upon which it may be worked out.

In so far as I may judge from personal errors, and from observation of the errors of others, I should say that faults committed

in the management of the sick arise as much from lack of theory as from lack of experience or knowledge; or, to state the proposition still more strongly, that a physician thoroughly grounded in pathology, thoroughly skilled in diagnosis, thoroughly conversant with the power of the materia medica, yet lacking a sound therapeutic theory, might fail in the management of a case of disease, less from the imperfection of science than from the want of a sure method of availing himself of even the imperfect knowledge of the day. To secure the best clinical results from modern laboratory investigations, medical theory as well as medical practice—in other words the coördinating principles formerly embodied in the lectures upon "The Institutes of Medicine"—must again be taught in our medical schools.

In thus pleading for the recognition of the usefulness, nay the necessity, of therapeutic theory, if we are to progress in the practice of medicine beyond diagnosis, I am not unmindful of the history of the past; rather do I find therein—together with warnings against the construction of hypotheses from insufficient evidence, and against the erection of plausible theories into rigid systems—incentives to the construction of hypotheses and theories that may serve, as it were, for lenses to concentrate and focus upon individual problems the entire light of contemporary knowledge, and proofs of the enduring usefulness of theories reasoned from facts of observation, properly limited and judiciously applied.

The lines of induction from facts of observation to principles of therapeutic theory must come from several sources—from medical history, from clinical experience, from laboratory research in all the special medical sciences, and also from the facts and generalizations of biology. Indeed, I believe the most important work toward which medical teachers and thinkers at the present day can turn their attention, to be the coördination of medical science with the study of life and life-processes in general, in the light of the great advances made during the nineteenth century.

In such studies, prominence must be given not only to the ontogeny, but to the phylogeny, of man. Phylogeny, too, must be understood in its widest sense; for in order to fully comprehend those susceptibilities to disturbance and powers of recovery which form the chief data of the science of medicine, we must know the internal endowments and tendencies and the external circumstances, through the action and reaction of which man has reached his present state, and in how far the same intrinsic and extrinsic agencies are now operative or what modifications they have undergone. This involves, moreover, a study of the fundamental factors concerned in the origin and development of living beings in general; which, like the basic facts of all other sciences, must be sought first in their most simple manifestations—an order which the exigencies of medical practice have hitherto compelled us to reverse, thus greatly increasing the difficulties of the student.

Fifty years ago an attempt to base pathologic and therapeutic doctrines upon the data of biology would have been premature, because the great theory of evolution and the investigations into the development of organic beings, stimulated by that theory, were immature and in the controversial stage. And even twenty years ago it would have been unwise, for the reason that the errors and crudities necessarily pertaining to controversial periods, the first struggles of a great truth and the infancy of a new philosophy, were held with dogmatic insistence by the new converts and untrained disciples of Darwin, Spencer, and Haeckel. But now, not only has the evolutionary doctrine been measurably freed from error, and the main truths thereof firmly established, but on the other hand, what is no less important—for biology, like all other sciences, takes color from the prevailing philosophy—the world of thought has escaped from that abject slavery to Spencer which followed its defeat in the struggle against Darwin. So, too, the correction and improvement of Darwin's doctrines, which that great thinker himself foresaw and hoped for, are in progress. The new school of biologists, with the exception of Wallace and his followers, have become less exclusive partisans of natural selection; they have learned to take the truth from Lamarck and combine it with the truth from Darwin, showing development to have proceeded by the operation of natural selection, it is true, but along definite lines and not through the accident of haphazard variations; the lines of development being the result of habit and use, of action and reaction between organism and environment, and thus based not alone upon the operations of the external world, but also upon the inherent capabilities and tendencies of living matter—the distinguishing characteristic of which is thus shown to be its plasticity; not, however,

a mere passive capacity of being shaped by forces from without, but also the power of directing its own formation by forces acting from within.

This plasticity of living matter—this capability of adjustment and readjustment to changing environment, which remains in the highest degree man's endowment, by virtue of which he has spread and flourished over a wider range and under more diverse conditions than any other terrestrial being, and through which his intellectual, spiritual and social development is apparently capable of indefinite progress—demands the close attention of the physician. It is the fundamental factor underlying all his studies, the principle binding and coördinating them into an organic whole. Anatomy and physiology, comparative and special, exhibit its normal operations and their results. Pathology is concerned with its operations and their results under perverting influences. Diagnosis investigates such perverse operations with the view to discover the means by which they may be recognized and discriminated. Therapeutics studies them to discover in how far they tend to persistence or to recession, and whether, and by what artifices, perversion may be combated and restoration aided; supplementing this study by an investigation of the modifying effects of all known influences upon vital processes, normal or pathologic. This brings once more into view a fact of the highest importance both in the study and in the practice of medicine—namely, that *disease and recovery are alike vital processes in which the organism itself is the most active agent.*

This principle is neither new nor strange to this Faculty; it is old, at least, as the sage of Cos, and it has continued to inform the best medical teaching and practice from his time to the present; and yet too frequently one misses its impress from current literature and current treatment. It would ofttimes seem as though medical writers regarded the human body somewhat as a vessel in which chemic reactions take place when the appropriate ingredients are brought together; as if it were supposed to be entirely passive in both morbid and recuperative phenomena, undergoing certain deleterious changes through the operation of an active agency termed disease, against which and its results another active agency, the power of drugs, must be invoked if destruction is to be averted. Nothing could be more fallacious, and nothing so hinders our progress toward a true science of therapeutics.

The logical rule that whatever is explicated has been implicated, applies to the problems of medicine no less than to all other human experience. Neither the agents provocative of disease nor the agents used in treatment impart to the organism new qualities or introduce into its operations new powers. Their effect is merely to induce perturbations, and this only in two ways: they may modify that which is habitual, or they may evoke that which is latent; but for good or for ill, such is the full extent of their action.

Nor is any exception afforded to this statement, even by such violent perturbations as may result in immediate death; for the necessity of death is implied at birth,* and were the organism not endowed with the capacity to die as well as to live, the process of dissolution could not be effected by external influences. In other words, the very molecular constitution enabling that form of matter which exhibits the phenomena of vitality, and which we therefore speak of as the seat of vital force, to resist for a time ordinary disintegrating influences, subjects this vital matter to the necessity of gradual change, and exposes it to the possibility of sudden disruption, with loss of vital power, and return to the condition of non vital matter. Such transformation, whether it occur through gradual decay or through sudden violence, physical or chemic, we term death; but, gradual or sudden, it is inevitable, and perturbations causing it can only be said to modify by acceleration the habitual course of events.

Now this method of statement is not a mere metaphysical refinement; it embodies ideas necessary to the understanding of our subject. Modern teachers for a time refused, and indeed some still refuse, to admit the legitimacy of such an expression as "vital force." Vital phenomena were looked upon as purely chemic and mechanic, and the attempt to explain them on any other basis was considered as a survival of superstition or a revival of mysticism. That many of the phenomena occurring in organized beings are chemic and mechanic, none disputes. So do chemic and mechanic phenomena take place in electric batteries and dynamos. But as electric force is a manifestation of univer-

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* "Ah fools, that think not how to all on earth
The very death is born along with birth."
—*William Morris.*

sal energy differing from chemic and mechanic forces, though mutually interconvertible with them and with other modes of energy; so vital force, life energy, or, as I have on a previous occasion termed it, *bionergy*,* is a mode of universal energy, differing from, although convertible into, other forms of energy, and finding its seat in living matter; but, in the present state of human knowledge, not producible from other forms of energy save through the intermediation of matter already endowed with life.

Upon the fact that bionergy is capable of transformation into chemic and mechanic modes of energy depends the possibility of organic function as distinguished from growth; and upon the converse fact that chemic and mechanic modes of energy may be converted into bionergy depends the possibility of the reconstitution of the organism by nutrition after the exercise of function, and of the successful use of therapeutic measures in combating the perturbations of disease or in compensating for their effects.

By this method of viewing the manifestations of life, whether in health or in disease, or in the process of transition from health to disease or from disease to health, certain therapeutic principles are seen to emerge. Living matter alone exhibits an opposition to the otherwise universal retrograde metamorphosis of energy—integrating its atomic bonds, as Cope has said, by "antichemism"—that is, with the absorption, and not the dissipation, of motion as manifested by heat. As this is the fundamental condition of anabolism, alike in growth and repair, the necessary connection of repose with constructive and recuperative processes becomes evident, and the therapeutic value of rest is established upon a positive rather than a negative basis; upon fundamental principle rather than on mere empiricism.

Furthermore, as, generally speaking, the agents used in treatment, apart from foods and heat, bring into the organism no new store of energy, though they may unlock its reserves or guide its activities into special directions, and as the exercise of function—katabolism—results in the disintegration of tissue and dissipation of energy, the dangers, as well as the legitimate uses, of so-called stimulating remedies become apparent. If in one instance the emergency calls for sudden putting forth of force, as when a horse is about to leap over a chasm, and the spur may therefore be imperatively demanded, yet in another instance it may be better to avoid such explosive action; and in none can it be continued indefinitely. Diminution of the functional activity of the heart in certain conditions may be a necessary part of the rest of recuperation, and the drugs with which we goad it into function will exhaust rather than strengthen. The oxygen that in a case of lobar pneumonia may aid in supplying the suffering organism with the energy needed to carry on its operations, or that in a case of anemia may similarly improve the nutritive processes, may hasten death by too great excitation of chemic changes in a case of pulmonary tuberculosis. Strychnin, ammonium compounds, alcohol, all of the highest utility in certain emergencies and in regulated dosage, all serve to exhaust reserve energy when pushed beyond the point at which constructive processes can keep pace with the destructive processes they initiate. If alcohol at times saves the tissues from the combustion of fever, it is as a food, not as a stimulant, and the growing experience of the best physicians is more and more restricting this field of its use.

Similar considerations, both as to the usefulness and the basis of sound therapeutic theory, come into view if the problem be approached from the historic direction. Such a study would give material for many papers. Here we must restrict ourselves to the most sketchy outline. Medical progress, like that of all other human knowledge, has proceeded not in a straight line, but in a spiral, forever returning upon itself, but forever rising to a higher plane. Now, if we seek to discover the axis about which this spiral revolves, and which, therefore, represents the direct path of progress, we find it in the recognition of that power—or rather that constitution, that aggregate of conditions—termed by Hippocrates *physis*, by Sydenham *natura*, to which is due the faculty of the organism affected with disease to recover its primal integrity of structure and of function.

In different ages this power has been variously described, variously interpreted, in order to bring its operations within the compass of thought by coördinating them with the general trend of philosophic speculation; the language used depending less upon the facts of observation than upon the prevailing hypotheses of the constitution of the world in general and of life in particular. We are inclined to cavil at some of these methods of

* A System of Therapeutics: Edited by H. A. Hare; article "Tuberculosis," vol. i, p. 721. Philadelphia, 1891.

expression or interpretation. The *archæus* of Van Helmont is to us the product of a disordered imagination or of superstitious mysticism. We declare that the *anima* of Stahl was an unphilosophic conception, impossible to one entertaining just ideas concerning the operations of the human mind and body; while Cullen's *vis medicatrix et conservatrix naturæ* is a vague expression which explains nothing. Yet which of the terms current in our contemporary philosophy or in our scientific nomenclature will stand better before future generations?

As the languages of nations vary, so do the languages of eras. As he that would translate from a foreign tongue into his own vernacular must saturate himself with the spirit not alone of the author but of the people and the language from which he is translating; so, if we would derive instruction from the students and thinkers of the past, or even if we would only correctly estimate their language, we must try to saturate ourselves with the spirit and the trend of the era, to understand in some degree the contemporaneous development of civilization, the state of arts, letters and sciences, and the predominant philosophic theories. In such a spirit we should find that, however various their language, however different upon the surface their explanations, however contradictory or inconsistent at certain points their systems, however much of the false and the ephemeral may have been combined with the true and permanent, yet Hippocrates and Van Helmont, Sydenham and Stahl and Hoffmann and Boerhaave and Cullen, and even the erratic Paracelsus, were at one in recognizing that great factor that lies at the basis of medical science and therapeutic progress — in recognizing the fact that the power of the human body to recover health, that which the unthinking call "cure" and the philosophic "recovery," comes from within and not from without, as a natural endowment and not as a gift of art.

Attempting to place this principle in language harmonizing with the generally accepted views of our own day, it may be well to consider more particularly for a moment what we mean by nature, what we mean by health and disease, and what we mean by recovery.

Nature to us is not a personality or a power, though the term may thus be used conventionally or metaphorically. Whatever view we may take of the origin of the universe, whether we believe with the inspired poet of old, that "In the beginning God created the heavens and the earth" and all that they contain, or whether we are content with that narrower view which looks upon the Power behind phenomena as equally unknowing and unknowable, yet in scientific language we can only mean by nature "the totality of observed [or possible] coexistences and sequences." We say that it is nature which in spring renews the beauty of the earth, making the bird to sing to his mate, the flower to yield its fragrance; by which we mean that this association of events has regularly recurred during the entire period of remembered or recorded human observation, and that hence we expect it to continue to recur as a matter of course. So when we speak of recovery from sickness as being due to nature, we can only mean that it is the ordinary course of events for the disturbances we call disease to subside and the state of order we call health to be re-established, and that this takes place because it is a necessity following from the constitution of the world in general and of living beings in particular.

When we speak of health and of disease we do not speak of entities or forces, but of states of the organism. It is usual to define each of these states by negativing the other: He is in a state of health who is not sick; and he is in a state of disease who is not well. And perhaps no definition can be constructed that upon final analysis shall be any more satisfactory. We may nevertheless try to describe the states which we term health and disease in such a way as to bring out more clearly the relations in which they are contrasted.

We speak of health and disease only in relation to living beings, and perhaps the best definition of health is one based upon Mr. Herbert Spencer's definition of life. Life, according to Mr. Spencer, consists in the continual adjustment of internal relations to external relations. This statement, removed from its context, may not appear very lucid at first glance, but reflection will show that it embodies a profound truth. The living being, in order to maintain life, must be in a state of continual adjustment and readjustment with his environment, the external world. If, for example, the external temperature falls, the nervous system and other thermogenetic mechanisms of a warm-blooded animal must be brought into activity, so that, manufacturing more heat, he is able to maintain his temperature at its normal

level despite the fact that the external cold increases his heat-loss; while heat-loss may likewise be in some degree controlled by the constriction of peripheral vessels and other physiologic reactions. This is an adjustment of an internal relation to an external relation, the external relation being low temperature, the internal relation that is adjusted to it being the thermal mechanism of the animal. A further example quite pertinent to our studies may be found in the reaction of an animal invaded by pathogenic micro-organisms, let us say diphtheria bacilli. The first result is the production of a poisonous product, called, in the case supposed, diphtheria poison or diphthero-toxin. Thus far we may suppose the invaded organism, *quâ* organism, to be passive, the effect being biologic on the part of the microbes but chemic on the part of the animal tissues. If the production of this toxin were allowed to proceed unchecked, and if nothing intervened to expel, antagonize, or neutralize it, the animal would die; but the life energy comes into play—the cells and fluids, whether indirectly through nerve stimulus or directly by chemic or more recondite process, react further against the toxin, and, to use Spencer's language, "adjusting" themselves to it, produce an antagonistic substance, called, therefore, antitoxin. The antitoxin counteracts the effects of the toxin, and if it is produced with sufficient rapidity and in sufficient quantity the animal recovers. Thus the maintenance of life depends upon the power of the animal to adjust its internal relations to the varying relations of the external world. *Health is that condition in which this adjustment may most readily be maintained.*

An imperfect or disordered mechanism of heat-regulation or heat-production, nervous or vascular, may react imperfectly or excessively to the stimulus of external cold, and lowering of temperature, general or local, results, with profound lesions or perhaps a lethal termination. The power to produce antitoxin may be wanting or impaired through some failure of the delicate mechanism of coördination, and death thus be inevitable. But further than this, during the period occupied by the reaction that is to restore the adjustment between an animal and its environment, there is often a disturbance—in part physical and chemic, but essentially biologic—of the relations of its functions to each other. Such derangement may be the direct result of the change in external relations—in the cases supposed, the change of temperature or the activity of the microbes—or an indirect result of the excessive or diminished activity of some particular function or functions thrown out of relation with the rest: thus, in the case of diphtheria, fever indicates a derangement of thermic relations which may be due to excessive heat-production or diminished heat-loss, or both, while dyspnea shows a derangement of relations in which lessened respiratory function and increased muscular function are mingled. This *disturbance of internal relations* we term *Disease;* some of its manifestations exhibiting a tendency to the impairment or termination of life, others being evidences of the struggle to restore the adjustment between internal and external relations and therefore tending to the preservation and perfection of life—a point not of mere theoretic significance, but always to be borne in mind by the practical physician: for it is obvious that with respect to the one class of disturbances, those tending to the impairment or termination of life, therapeutic intervention may be required to oppose them; while in respect to the other class, those tending to the preservation and perfection of life, therapeutic intervention will either be unnecessary, or, if required, will be required to regulate or aid, never to oppose.

To repeat: *Health* is *the balanced condition of internal relations*, that state in which, with integrity of structure, all the functions of the body are performed, each with reference to the other, at proper times and in a proper manner, so that internal equilibrium is preserved; and *disease* is the opposite of this—*any state in which, usually with concomitant alteration of structure, there is an excess or defect of one or more functions in relation to others*, whether such perversion (excess or defect) be manifested in time, in quantity, or in quality.

Such being our conception of health and of disease, it is evident that the state which we call disease may be brought about in various ways—from failure of internal adjustments (autogenetically, intrinsically); from failure to react properly to changes in external relations; or in the process of reaction and readjustment (heterogenetically, extrinsically); and will exhibit a multiplicity of phenomena. Certain of these phenomena we find to be commonly associated and to have common antecedents; and grouping together such common associations of sequence and coexistence we erect them into what we term

diseases. It is unfortunate that the same word should be thus used to denote the general state of unhealth and the association of special phenomena or relations of unhealth For upon a clear understanding of the difference between disease and diseases depends much of our knowledge of medical principles, and the indiscriminate use of the one word leads often to an ambiguity of expression only to be avoided by awkward periphrasis.

Ambiguity of expression can scarcely fail to cause confusion of thought. It was upon such a confusion of terms that the Brunonians and their opponents waged their controversies over the unity or diversity of disease—both being right; for the state of disease is unquestionably a unit of generalization, while the special diseases are multiple and diverse groups of phenomena — diverse, however, only in their association, not in their basic elements. It may, again, seem that this is a metaphysical refinement without practical bearing. History, however, shows its importance. The Brunonian error of thought led to many errors in treatment, some of which (especially the practice of over-stimulation or ill-timed stimulation in so-called asthenic diseases) traditionally and empirically survive for ill to-day; perhaps most largely among those who have never heard of Dr. John Brown.

It would be desirable, in any extended explication of the principles of medicine, to devote special attention to the laws of association of symptoms, lesions and causes by which we are justified in discriminating one train of morbid events from another as a disease. The failure of all systematic nosologists and nosologies, from the earliest times to the present, might be found to rest upon a more profound basis of fundamental facts and relations than has been generally admitted. For therapeutic purposes, too, the discovery of such laws would be important, for they would at once increase the factors, and simplify the elements, upon which rational treatment might be based. In this essay, however, I can merely call brief attention to certain etiologic facts already alluded to, but needing some little elaboration.

We have seen that the organism itself is to be included among the factors of disease; not only in the limited sense admitted by current teaching concerning predisposing causes, or in that very partial and faulty view of the morbid processes excited by micro-organisms which is summed up in the phrase, repeated and reiterated *ad nauseam*, of "seed and soil," but in a far more profound and fundamental relation.

Our common errors of thought and expression in this regard may be traced back to a fundamental error in the method of viewing natural processes as a whole—the separation of matter from force, of the actor from the power, which the schoolmen of mediæval Europe inherited from the Greek philosophers, and which the authority of Descartes long imposed upon the modern world. Advanced investigators in physics of the present day, however, look not, with Aristotle, for "prime movers," but recognize the incessant motion of matter as a manifestation of its own inherent properties. So, too, though habits of language frequently involve us in expressions seemingly contradictory to this rule, the isolation of any one of a given number of antecedents, as *the cause* of the sequence following their conjunction, is regarded as unphilosophic.

Mathematicians have always recognized the principles here involved: xy is the product of x and y, whichever may precede in time. So the complexus we term an infectious disease is the product of the animal organism x and the microbe y; and is not, as we commonly say, regarding the animal organism as passive, produced by y. Now this opens the way to a conception of great importance in therapeutics—that of the multiple etiology of certain diseases that we are inclined to look upon as specific; for example, diphtheria, tuberculosis, and typhoid fever. Given a train of mechanism, for example a clock, it matters little whether the driving power be weight, spring, or electric action, whether the pendulum be started by a push from the hand or the attraction of a magnet; once the wheels are set in motion they pursue a definite course depending upon their conformation and mutual relations, and the physical laws governing such combinations. So, such of the phenomena of disease as are known to be common sequences of various exciting causes are admittedly to be explained by the constitution of the organism; but may not many of the phenomena for which we seek single exciting causes be similarly the effect of more than one agent? The decision, of course, depends purely upon the evidence attainable; but there is no *a priori* reason why a chain of events essentially the same in each instance should not follow the incidence of any one of several so-called exciting causes. "Such a phe-

nomenon, at all events," says Rolleston, "as a living animal is often enough produced by two or more distinct processes within the limits of the same species: as, for example, from ova of different character, summer ova or winter ova, impregnated or unimpregnated ova; by fission or gemmation; through two different series of metamorphotic changes; and such a phenomenon as the production of a particular tissue may depend—in the case of adipose tissue, for example—upon the employment in nature's laboratory of one or the other of two different chemical compounds." Similarly, Cope points out that in animals of different orders, identical structures may come into being by different evolutionary routes.

Another important feature in the synthesis of disease in complex organisms such as the human body, needs likewise to be considered. The body is made up of organs, the organs of tissues, the tissues of cells, the cells being that from which all else proceeds. In addition to the life of the organism as a whole, each cell has its own independent life, just as the individual man in a community has his independent life. The life of the organism depends upon that of the cells, and that of the cells upon that of each other and of the organism as a whole. Hence result not only the evolution and importance of communicative and coördinating mechanisms (the vascular and nervous structures), but likewise the production of widespread perturbations from disturbances of a single part; such perturbations following, as we have seen, a certain chain of association independent of the exciting cause. Further, an important difference between the cell life when isolated as an entirely independent unity, and the cell life when continuing in a community, relates to the disposal of waste, whether produced by the chemic decomposition incident to the exercise of function or by the rejection from the absorbed materials of those unsuited for nutriment. The isolated cell discharges these directly into the outer world; the associated cell often discharges them into the vascular channels of the organism of which it is a part. Each cell must, therefore, have become habituated to endure the presence of the ordinary excreta of other cells, and indeed some of these are utilized nutritively or as stimulants of function, or in other ways not clear, by special organs or by the organism at large.

If, however, these excreta become altered quantitatively or qualitatively, or find unusual channels of distribution, they may interfere with normal processes or act as excitants of morbid trains of action. All toxins, therefore, are not of extraneous origin, and we have to deal therapeutically with poisonous products of metabolism, autogenetic toxins, in addition to heterogenetic toxins introduced from without, or those that are the result of the action of invading microbes.

The chemic and pathogenic similarity not only of these different classes of toxins, but also of leucomaines, ptomaines, and vegetable alkaloids, has a fundamental origin in the constitution of living matter and in that vital reaction of the organism which we find at the basis of all pathologic as well as of all recuperative processes. The natural process of dealing with the products of waste—namely, by excretion—explains many of the symptoms of disease, and justifies not only the ancient doctrines of peccant humors and critical evacuations, but the good old practices of cleansing the *primæ viæ*, of producing therapeutic discharges by the emunctories, and of removing by the lancet useless and waste-laden blood, as in uremia and some cases of pneumonia.

But in speaking of venesection and therapeutic evacuations it may seem that we have become recreant to our faith in the *vis medicatrix naturæ* and are professing allegiance to an usurping *vis medicatrix artis*. It was long ago pointed out that in stating one truth, or rather one phase of universal truth, strongly, we are liable to fall into the error of minimizing other truth. In endeavoring to show that recovery is a natural process, we have perhaps unduly obscured the fact that natural recovery is not always effected; nor when effected is it always complete. In the more detailed study of the subject, therefore, there are many modifying circumstances to be considered. Time will permit in this paper but brief allusion to a few of these. Let us view, for example, the great differences between acute and chronic processes; between those storms which in time pass over, and those slow disturbances and degenerations which persist indefinitely, extending continuously or with alternations of repose. It is quite obvious that whereas under some circumstances the organism, unaided by art, may be capable of adjusting itself to the conditions brought about by the exciting agents of acute diseases, yet it does not overcome in a similar manner chronic morbid processes. In such chronic conditions, therefore, we have to consider many

facts which do not enter into consideration in the acute. The primary exciting cause may have long since ceased to act, as in the tissue-degenerations following certain of the acute infections—for example, syphilis, or some of the varieties of so-called rheumatism. The change brought about in the tissues may be stationary and in itself of comparatively little consequence, and yet through its location produce disorders by its interference with important functions; as, for example, changes in the endocardium limited in extent and which would be unimportant in character were they but situated upon the skin. It is true that natural compensation does take place to great extent in endocardiac lesions, and we know, for example, how life may be prolonged and comfortable with the existence of valvular incompetency; but such compensation is effected by overgrowth of the cardiac muscle, and in time, even under the most favorable circumstances, ceases to be maintained. Here, therefore, is a proper field for the exercise of art in prolonging the time of compensation and in averting or combating the consequences of failure. Let us suppose, however, that the accidents—that is to say, the unknown antecedents and coexistences—of the primary infection or intoxication have so altered the cardiac valve or orifice that not insufficiency but obstruction is the result: how much more difficult becomes the effectuation of natural compensation! how imperfect it usually is, and how much greater care and judgment upon the part of patient and physician are necessary to avert or postpone evil consequences! Or let us consider the degenerations that take place in organs of secretion and excretion, as the liver or the kidney:—the nephritis that follows an acute infection, and in which through tissue-memory, essentially the same fundamental property of bioplasm that permits of progress, the perverted processes persist, and continue to interfere with the important functions of the organ; or the cirrhosis, whether due to alcohol or to other exciting agent, the immediate influence of which has long since ceased, the more lowly tissue continuing nevertheless to grow at the expense of the more highly organized, checked perhaps, but not brought to an end, by natural process, and leading to portal engorgement, dropsy, and other well known phenomena. Here, too, the art of the physician is called upon to maintain, so far as he is able, the function of the damaged organs; to awaken where possible compensatory processes in other organs; to remove morbid products—toxins and effusions; to postpone or to avert the grave consequences of impaired function. Still more difficult problems are presented by the grave degenerations of the nervous system, the scleroses of the cord, the indurations of the brain, which modern pathologists attribute to the continued results of a past infection. The object of art must be to try to find some means to accomplish the result that nature has been unable to accomplish, and to hold in check the retrograde metamorphosis of tissue. Failing this, endeavors to prolong life and to promote comfort by symptomatic treatment, hygienic and medicinal, are not only justifiable but necessary; and experimentation must be conducted both in the laboratory and at the bedside.

The general problems presented by acute diseases are much simpler, and the power of natural recovery more manifest; yet even here we are compelled to qualify any statement implying the complete efficiency of the organism to recover, when unaided by art.

Among the children of civilized nations that chain of disturbances and restoration to which we give the name of measles, is ordinarily of minor importance; with the most simple precautions, and sometimes with none, recovery takes place in the vast majority of cases. Yet we all know the awful fatality of the disease among the natives of New Zealand, when introduced into that island by English newcomers; and even in our own community the death-rate of measles has not become *nil*, nor have we yet succeeded in tracing thoroughly the secondary disorders which it may excite or toward which it may be a predisposing factor. Moreover, we still recognize in this affection, as more dreadfully in others, malignant or fulminant cases in which life succumbs almost without a struggle. Let us consider, moreover, diseases essentially fulminant, such as cholera, which in the preponderance of instances the organism is unequal to combat. What greater contrast, indeed, could be offered than by two diseases, both attributed to the poisonous products of micro-organisms, in both of which the alimentary canal, indeed the intestine, is supposed to be the point of entrance of the infectious agent, both conveyed to large extent through water contaminated by the excreta of previous cases—cholera and enteric fever! Enteric fever slowly reaching its acme, slowly declining, two-thirds or three-fourths of the patients recovering if left alone; cholera prostrating almost at a single blow,

reaction occurring late and suddenly if at all, and failing to be maintained in the greater number even of those cases in which it is manifest. We have learned that art can do much to increase the number of recoveries in typhoid fever by simple measures directed toward the removal of conditions which obstruct the natural recuperative process, and which make no attempt at specific destruction or neutralization of the microbe or its products. Here the Hippocratic maxim, "To do good, or do no harm," is especially applicable. But in cholera we know that art must find some means to supplement nature, when once the natural barrier to infection, the healthful condition of the gastric secretions and of the intestinal mucous membrane, has been broken down. It may be that the intestinal flux in cholera is but the exaggeration of a form of reaction often useful in the expulsion of noxious material, but whether it be so, or be essentially morbid, it is a direct source of danger, to be checked if possible. Not only laboratory but clinical experiments toward the destruction of the pathogenic organism of cholera, toward the neutralization of its toxic products, and toward the mechanic and chemic counteraction of its symptomatic dangers, are eminently justifiable—are necessary. While, however, awaiting the discovery of radical or specific remedies, an enlightened art will seek to discern in such a process the main danger and to endeavor to avert this by opposing its mechanism, thus sustaining life while bringing into play that principal element in the natural readjustment—time. The two facts, that even among ordinarily mild affections fulminant cases may occur, and that even among fulminant diseases cases of spontaneous recovery are known, may here be placed in juxtaposition, and much may be learned from the relation thus made manifest. Given time to bring its reserves into battle, the human organism will conquer the hosts of microscopic invaders. This it has learned to do, during its ages of evolution, through the operations of the natural laws of action and reaction and the hereditary transmission of acquired properties, in the case of those milder acute affections which still show signs of their ancient virulence when brought among populations hitherto unaccustomed to their presence; for, one of the main facts made clear by the coordination of pathology with biology is that in proportion to the frequency with which given disturbing influences have been encountered and overcome in the evolution of the race, the more fully developed is the reaction-apparatus, and the more rapidly and completely is its work performed. The education of the automatic process of reaction is incomplete in the case of fulminant and malignant diseases; yet, nevertheless, though tardy, the power is there, and requires only the opportunity to be brought into exercise.

To return to our illustration of cholera: we observe as the most dangerous train of phenomena—as that against which art must exercise its supporting power until such time as it learns to oppose more directly the proximate or exciting causes of the morbid processes—the rapid removal from the system of its fluids, with consequent loss of heat and inability to effect those mechanic and chemic changes which depend upon the presence of heat and of fluid. The practice of supplying heat and fluid as early, as promptly, and as continuously as possible, by external applications, by enteroclysis, and by hypodermoclysis, while at the same time endeavoring by the use of appropriate drugs to counteract symptomatically the morbid mechanism or diminish the violence of its action, has accordingly been the most effective means of bringing about recovery in an increasing number of cases; yet the comparatively late introduction of these most important measures into general practice, despite the fact that they have been from time to time advocated by theorists, is a proof that to depend upon empiricism only, without philosophic reflection to direct and interpret it, is to fail of the highest possibility of achievement.

It has been said that fever and its treatment constitute the touchstone of medical theory and practice. Throughout medical history there have been those who taught that the phenomena of fever were evidences of the reactive power of nature against the agents of disease; and although there have always been others who held opposite theories, this Hippocratic doctrine may be accepted as a final truth. Had this principle been formally taught and thoroughly engrafted in the minds of our profession, we should not recently have witnessed the melancholy abuses of antipyrin and similar agents, of which it may be said that if typhoid fever or influenza has, like Saul, slain its thousands, the antipyretic drugs have, like David, slain their tens of thousands.

The importance of time as a therapeutic element has been alluded to. This finds a striking illustration in that greatest advance of modern therapeutics, which we have al-

ready mentioned in illustrating the mechanism of natural reaction, the so-called serum or antitoxin therapy, the production of the agents and their usefulness both involving this factor. While we need not dwell upon the well known details, it may not be amiss to point out that, whereas against such processes as diphtheria, tetanus, scarlet fever, and the like, the method may and should be employed when available, yet the endeavor to treat tuberculosis similarly does not seem to be founded upon a rational basis. The principal, I had almost said the essential, agent in the morbid complexus of tuberculosis is the constitution of the patient, and neither the bacillus nor its toxin. Furthermore, toxemia is one of the latest phenomena in cases of chronic tuberculosis, and in acute tuberculosis the dissemination of the poison and the destruction of the organs is usually so great by the time the toxemia is manifest that there seems to be little chance for antitoxin to act curatively. However, it is well to observe an expectant attitude towards the observations now in progress, and to adopt the method if it should at any time seem to recommend itself through the experience of competent and unbiased physicians.

Another great modern advance, is organotherapy, that method—most strikingly typified by the use of extract of thyroid gland in myxedema—which aims to supply deficiencies in the functional activity of certain human organs, principally the ductless glands, by the administration of substances derived from similar organs in animals. It is not merely the administration of certain products derived from the animal kingdom, similarly to the administration of other products derived from the vegetable and mineral kingdoms, for the sake of certain anatomic and physiologic results which these substances are capable of effecting (extrinsic or heterologous therapy), but it depends upon a closer and more intimate—a more fundamental—relationship between the drug and the functions of the human organism than exists in the other cases (intrinsic or homologous therapy).

It will be observed, however, that the administration of pepsin in indigestion, of thyroid extract in myxedema, of bone-marrow in anemia, of adrenal extract in Addison's disease, and the like, have nothing whatever in common with that pseudo-scientific method through which an unpleasant notoriety was, not long ago, given to the subject of "animal extracts." I have elsewhere treated this subject at length;* here it may suffice to say that the functions of the heart, of the kidneys, and of the brain, and the results of the diseases of these organs, are so different in character from the functions of the thyroid, the adrenal, bone-marrow, and the like, and from the diseases engendered by failure of these functions, that one scarcely sees how the idea arose that the method of therapy scientific in the one case possessed an analogue in the other.

In connection with this subject, a point we have but briefly touched upon may be brought into prominence, namely, that certain pathologic phenomena are partial reversions of function and structure to earlier types in the evolution of the individual or the race; thus patients with acromegaly—a condition associated in some manner, yet obscure, with morbid alteration of the thyroid and pituitary glands, and in some cases apparently controlled by the therapeutic exhibition of preparations of one or the other—exhibit certain striking skeletal resemblances to prehistoric men, such as those of Neanderthal, and to the anthropoid apes.

In connection with disorders of metabolism such as gout and diabetes, this principle of reversion is already recognized by comparative pathologists, and much may be expected from its further development. So, too, in some cases of visceral and neural degeneration, and especially in the domain of psychic disorders, it has been usefully applied in diagnosis and in treatment. That the opposite is also true, however—that disorders which in the present state of human evolution are looked upon as diseases may be due to premature progression in certain directions—has not been as yet recognized by the consensus of professional opinion. Certain progressive ophthalmologists have called attention to the influence of that environment we call civilization in the production of errors of refraction, predicting a final adjustment in which spectacle-makers will, with the Moor, wail their occupation gone; but the same principle can be applied much more widely. Disorders of the alimentary canal, like diseases of the teeth, are largely due to a want of harmony between these structures and their present environment, and may be expected to diminish in number and importance as on the one hand we learn better to choose and prepare our food, and as, on the other hand, our viscera become modified in

* *The Philadelphia Polyclinic*, Nov. 15, 1893.

construction and function in accordance with the conditions of civilized life. But it is especially in regard to nervous disorders that this principle requires extended study and application; and as the processes and results of degeneration have been exhibited to us in so masterly a manner by Lombroso and Nordau, so should some of our great neurologists analyze and set forth what we may truly term the factors of regeneration—namely, of that new and higher birth of mind and soul of which man's present state is but the promise.

There are many other facts that should have been considered in a paper of this kind, such as the tissue-changes of inflammation and of neoplasms, and their therapeutic indications; and in the growing field of mental therapeutics, the legitimate exercise of the powers of mind over body, so long permitted to be abused by miracle-mongers and charlatans; but I have already trespassed too far upon your exceeding patience and courtesy.

My sermon has been based upon this text from Hippocrates: "The physician must be able to discern the antecedents, know the present, and foretell the future—must meditate upon these things, and have two special objects in view with regard to disease—namely, to do good, or to do no harm. The art consists in three things: the disease, the patient, and the physician. The physician is the servant of nature, and the patient must combat the disease along with the physician."

In the elaboration of this text, the main thought which I have endeavored to express is this: That if we hope ever to understand the normal operations of the human body and mind, or their perversions, or the methods by which these perversions may be prevented or corrected, we must be able to bring them into line with the fundamental facts of general biology and to avail ourselves of all the aids which may be gained from collateral sciences. We must understand, so far and so fast as the progress of general biology and allied sciences renders possible, the nature of the life substance and the life force, the modifications which these undergo under various circumstances, and what are the circumstances that are capable of modifying them. We must attain to as full a knowledge as possible of the various steps through which man has passed, physically and mentally, mechanically and morally, not alone in the development of the individual but in that of the race, for only thus can we understand the forces tending to departure from that which we are pleased to call the normal standard; whether in the direction of reversion to more primitive forms and processes, or in the faint beginnings of the more complex, which in their full fruition shall enable our posterity to solve without difficulty problems that to us appear inexplicable. We must recognize the dependence of man on his environment, as well as the power of man to modify that environment, and especially must we bear in mind the fact that the evolution of man—the tendency to progress—has been toward the development and improvement of his nervous system, while other parts of his physical organism have remained in a condition less perfect than that of some of his brute relatives; that, in fact, the very condition of his progress has been not alone the diversion of energy from muscular and osseous systems to the nervous system, but also the maintenance of nervous structures in that plastic state, impressionable to the outer world and responsive to the inner workings, which alone permits of further modification and the assumption of new powers. Thus, in the course of nervous modification, before adjustments to new conditions have been completed, while the evolutionary process is still, as it were, experimenting, before choosing that which will best tend toward the end in view, and while the general plasticity and impressionableness, permitting of the development of variations from which natural selection may choose, remains, we must expect a vast increase in the number of nervous disorders; but we must also learn to distinguish among them, so that we may not misinterpret as evidences of maladjustment or degeneration, processes which are the manifestation of a tendency toward readjustment, toward the generation of new powers and new faculties. So distinguishing, we must learn, moreover, to act in harmony with these new developments, for man alone among the vast number of living creatures has the power to consciously modify his environment and control in a measure his own evolution.

Secondly, I have endeavored to show that certain great truths concerning the nature of disease and recovery have been recognized throughout the course of medical history, and have always influenced the best teaching and practice. Here, two principal themes were elaborated: *First*, that disease and recovery are vital processes in which the organism plays an active part; in some instances, one continuous process. *Second*, that neither morbific nor therapeutic agents endow the organism with new qualities, or introduce into its

operations new powers—as the one, so the other can act only by modifying that which is habitual or evoking that which is latent.

Certain subsidiary facts were found worthy of attention:

1. In disease there are presented two classes of phenomena, between which the physician must discriminate: the one, morbid—that is, tending to the destruction or impairment of the organism; the other, salutary—that is, tending towards its preservation and restoration to comfort and usefulness.

2. The tendency of the organism to react in a salutary manner is often sufficient in itself to insure complete and perfect recovery, but it may be either deficient or excessive in several respects, especially as to time, degree, and extent; furthermore, processes salutary in general may be morbid in respect to particular circumstances.

3. When the processes are essentially morbid, or when they become so by excess or deficiency or by circumstances of the individual case, the intervention of art is required to assist, modify, control, or prevent natural processes, to sustain the organism during their evolution, or to avert incidental or sequential dangers or damages.

In such intervention, while we may properly use drugs and must often do so, and while our resources have recently been greatly increased by the utilization of nature's own alexiteria and functional stimulants and regulators, yet we shall learn to place greatest dependence upon those agencies—air, light, water, heat and cold, food, rest, exercise of function physical and mental—which, as the habitual environment of man or his habitual reaction to the environment, have recorded their effects in his line of development, his structure, and his faculties, and are still the most potent influences in his preservation and his progress.

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*SACCULATED INNOMINATE ANEURISM TREATED BY THE INTRODUCTION OF GOLD WIRE AND GALVANISM.**

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The departure from the routine method of any operative procedure has for its greatest drawback conclusions drawn from a too early report of its efficacy. For the treatment of aneurisms various methods have been recommended, several of which have apparently been followed by good results, but the history has seldom been followed up for a time sufficiently long to acquaint us with the ultimate results of the operation. For this reason, even at this date, nine months after the operation, it is with some misgivings that the case herein reported is presented to the medical profession, although sufficient time has elapsed in which to prove that at the very least some result has been obtained in the relief and comfort of the patient, and that, too, as the history will show, after all so-called curative and palliative measures had been resorted to. We all know that when an aneurism has assumed such proportions as to cause decided bulging of the chest, the patient becoming exhausted upon the least exertion, and finally from sheer weakness being compelled to keep his bed, we can soon look for a fatal result. Then, too, after concluding from careful observation that those remedies which have found favor among the profession have been without result, any simple operative means that will enable the patient again to resume his work and be still at it at the end of nine months should be resorted to before a more hazardous operative procedure is even contemplated. It is for this reason, and this reason alone, that the history of this case is presented in detail; and if the future shall prove that the operation is not a successful one, there is no reason why some of the other methods may not then be tried.

For a year and a half previous to the time I saw the patient as consultant with Dr. Place, he had been suffering from a deep-seated pain in the chest, described by him as being beneath and a little to the right of the upper part of the sternum. He had been treated for various affections, principally rheumatism. This pain was accompanied by more or less oppression in breathing, which always became aggravated upon exertion. In the early part of January, 1895, a slight bulging of the chest was noticed, gradually increasing until the following May, when a decided pulsating tumor was found, most prominent between the second and third ribs, about two inches and a half to the right of the median line. The case at this time was diagnosed by Dr. Place as aneurism. The latter part of July this diagnosis was confirmed by Dr. T. H. Hawkins and myself, at which time the following treatment was agreed upon: As near complete rest in bed

* Read before the Colorado State Medical Society, June 16, 1896.

as possible; Valsalva's method of diet; and barium chloride, one-fourth grain, increased to three fourths grain, three times a day. At the end of seven weeks the symptoms were all exaggerated, and the patient, being familiar with his critical condition, desired the introduction of the gold wire into the aneurismal sac, to be immediately followed by galvanism; this method having been urged upon him when it was ascertained that no favorable results were being obtained from the last treatment.

Fourteen-karat gold was drawn out to No. 28 gauge by Wagner, the jeweler, who conceived the very happy idea of snarling the wire, so that after it had been passed through the needle it would bunch itself rather than coil, as was at first intended. With the proper spring it was wrapped about a glass vial and placed in a clear carbolic solution, ready for use. The needle was a large-sized hypodermic one, with a calibré for about a No. 22 gauge. This needle was prepared by Dr. E. B. Warner, who accomplished complete insulation by layer after layer of the varnish of gum shellac, each layer set in its turn by heat. A thirty-celled galvanic battery furnished the current, which was passed through a McIntosh milliampèremeter.

On the 29th day of August, 1895, the patient was prepared for the operation. The skin over the tumor was cleansed antiseptically. The insulated needle was thrust into the sac, and the blood spurted through the needle to a considerable height. This, however, was immediately controlled by the wire (it having been previously washed), which was rapidly passed through the needle. The intention was to fill the cavity with the wire, it having been previously estimated that this would take at least ten feet. A fault in the wire after two and a half feet had been passed caused it to kink, which prevented any further introduction. The wire was cut about three inches from the needle and attached to the positive pole of the battery, the negative pole having for its electrode a flat, wet sponge covering an iron plate six by eight inches and kept in contact with the skin of the back, directly opposite the aneurism. Considerable uneasiness was experienced by the patient at first, but as the current passed he became reconciled and was content to bear the pain of the negative electrode. By increasing slowly the number of cells, Dr. Lyman Ellis, who controlled the battery, kept the indicator at 70 milliampères. With everything ready, the needle, which protruded fully three-quarters of an inch, at once became a guide as to the results to be attained: its rhythmical motion, swinging laterally like a pendulum, and with each pulsation of the heart springing upwards, during full three-quarters of an hour never varied the slightest, indicating little or no change in the contents of the sac. Simultaneously with a change in the rhythmical motion of the needle came the warning from Dr. Ellis that but 60 milliampères were indicated. As the motion of the needle became less and less marked, the resistance became greater; lower and lower fell the number of milliampères, until finally 40 were indicated at the end of one hour and five minutes, when the motion of the needle was barely perceptible, and, instead of the soft, full, pulsating mass characteristic of an aneurism, was felt a hard resisting tumor much smaller, which told the story of the only change that could have taken place—the formation of a blood-clot.

Now arose the most difficult part of the operation, the removal of the needle. What little blood had flowed into the needle about the wire had become decomposed and formed into hard, dry, fibrous tissue, acting as a cement. The wire, bunched within the sac and completely enveloped within the blood-clot, resisted tension, but the needle soon yielded to the force exerted and came slowly out. Pressure was made around the point of exit, and the wire cut close to the skin. The tension being off, the wire slipped out of sight, the whole mass having evidently sufficient spring to draw the end completely within the sac.

Careful examination of the tumor an hour later disclosed at the extreme right portion some softness, as of a liquid confined to a small space. This was evidently blood-serum confined to the upper and outer portion of the sac. All signs of this, however, disappeared in a few hours. Upon auscultation no murmur could be detected. The temperature rose that evening to 99.8°, the following evening to 100°, but after that the thermometer never indicated at any time a temperature to exceed 99°. That night the patient, for the first time in seven weeks, was able to sleep while lying on his back. During the following month of September, the improvement in his condition was marked. In October he returned to his work. In the latter part of December I presented the patient to the students of the various colleges who had assembled at the County Hospital; at this time his general appearance was excellent,

he had gained in weight and felt no inconvenience from the tumor within the chest, except that occasionally he had pain in that region resembling neuralgia. The tumor had somewhat contracted, but not to the degree hoped for.

At the time of this writing (June 16, 1896), nine and one-half months after the operation, the symptoms are about the same as they were during the latter part of December. The presence of the wire may have considerable to do with the pains in the chest. The symptoms of aneurism have all subsided, and the patient remains to be closely watched for future developments.*

It would be useless to occupy your attention by enumerating the different drugs used in the early treatment of this disease. Suffice it to say that one by one they were laid aside while the aneurism continued to increase, and day by day the case was closely watched with the expectation of the usual termination of these cases. To open up a discussion as to the merits of the operation would be more interesting and certainly fruitful of better results than to repeat the old story of drug therapy in the treatment of aneurism.

Discussion as to the solidification of the contents of an aneurismal sac has led to two beliefs—on the one hand, that it is an actual clot-formation; on the other, the formation of plastic fibrous tissue poured out by the sac-wall. In the case just related there is scarcely any necessity for discussion. No matter how greatly the wire and electricity may have irritated the sac-wall and started up inflammatory action, it is beyond all experience to find as a result the formation of solid fibrous tissue in so short a time. This may possibly be nature's method of bringing about a cure, but it certainly was not so in this case. The condition of the canal of the needle would show this without a doubt. Then, too, although results in the past from the use of electro-puncture have been poor, post-mortem examination has always revealed clotting to a greater or less extent.

The simple introduction of wire into the sac, as first tried by Moore of London—the purpose being to whip the blood into a clot—met with no success; but then, taking into consideration the fact that twenty-five feet of wire was inserted, and antiseptic methods were not carried out, we cannot wonder at the lack of good results. Later on, horsehair was used by Levis; and still later on, Schrötter of Vienna used Florence silk—with the same ungratifying results.

The method suggested and tried recently by McEwen is not without promise, but its hazardous nature and the difficulty of carrying it out will deter many from resorting to it. McEwen's method consists in scratching the inner wall of the aneurism, thus setting up inflammatory action and thereby strengthening the wall. This delicate manœuvring within the sac, knowing as we do that the wall is at times so frail that little force is necessary to penetrate it, requires a bold operator indeed.

There have been in all ten cases reported upon this combined method of treating aneurism, counting the one now under consideration.

Burresi's* case: Aneurism of ascending part of aorta; current for twenty-five minutes; 17 inches of No. 30 wire used; operation well borne; pain entirely gone at the end of three days; formation of firm clot. Death at the end of a hundred days. Electrical current, tested by a voltmeter, yielded one cubic centimeter of hydrogen gas for the first minute.

Barwell's case: Large aneurism of ascending and transverse part of aorta; ten feet of finest steel wire passed into one division of the sac; ten milliampères for one hour and ten minutes; signs of consolidation at the end of six hours; on fourth day rapid increase of secondary sac. Death on seventh day. Necropsy showed primary sac contained much thick, firm, decolorized fibrin closely united to sac and wire.

Roosevelt's case: "Aggravated aortic aneurism threatening death," involving four ribs on the right of the sternum; 225 feet of fine steel piano-wire introduced; 25 milliampères passed for one-half hour; less pulsation the second day; seventh day, better condition than previous to operation. Death on the twenty-third day.

Abbe's case: "Rapidly advancing aneurism at root of neck;" 100 feet of No. 1 aseptic catgut passed into sac; one part of tumor seemed firmer, but rapid advancement in another part. Ninth day thereafter, 150 feet of fine sterilized wire was passed through

* A letter received from California states: "All neuralgic pains gone. Electrolysis produced in his case beneficial and, so far as we can judge from observation, permanent results."

* Cases cited and bibliography mainly dependent on article upon this subject by D. D. Stewart, *American Journal of the Medical Sciences*, October, 1892.

insulated aspirator needle; for one-half hour a current of 50 milliampères, the anode the active pole, was applied, followed by 100 milliampères for one hour, reversed cathode the active pole; pulsation continued; tumor-wall firmer. Tumor-wall ruptured on second day.

Kerr's case: Fusiform aneurism from base of heart to origin of left subclavian artery; six feet of silver wire introduced; current applied for fifty minutes—strength not given; pain and pulsation greatly relieved. Death on eighteenth day. Necropsy showed that a firm clot had formed about the wire as well as on the sac-wall.

Kerr's case: "Aortic intra-pericardial aneurism;" electrolysis tried without success; then electrolysis through introduced wire—ten feet of drawn silver—current one-half hour, strength not given. Patient lost sight of one year later. No symptoms up to this time. Patient stated he "was feeling as well as ever." This case considered a cure.

Rosenstein's case: Aneurism in ascending part of arch; galvano-puncture tried twice; first, single needle, 70 milliampères for twenty minutes; second, thirteen days later, repeated with two needles; no beneficial results. Five and a half weeks later a little over two feet of wire was introduced entirely into the sac; current applied thirty minutes—presumably 70 milliampères as above, though not stated. Pulsation disappeared the seventh week, complete recovery following.

D. D. Stewart's case: Large advancing thoracico-abdominal aneurism; two and a half feet of wire used; current gradually increased to 70 milliampères; continued for one hour. Rupture on ninth day. Necropsy: Firm clots in all portions of the aneurism, with softened ones evidently of recent origin. Difficult to separate the clots from the wire.

Stewart's second case: Report not yet published, although the case is still living and was treated much the same as previous case three years ago,* with the exception that ten feet of fine gold wire was introduced and a current strength of 80 milliampères for an hour and a quarter employed.

With no small amount of interest will the result of this last case of Dr. Stewart's be awaited, as it was through the courtesy of this gentleman that the technique of the operation performed in the present case was learned, and there can be no doubt that upon the results obtained by such an operator can be placed the true value of this method of treatment. And, although the results in the writer's case have been gratifying indeed, in Dr. Stewart's hands they must have been even more satisfactory.

In most of the cases narrated, any operation seemed hopeless, except in Kerr's second case and Rosenstein's case. Then, too, Stewart's last case will show very beneficial results. Allowing the case reported this evening to rank among the greatly benefited, and counting Kerr's, Rosenstein's and Stewart's cases as cured, we have thirty per cent. of cures, twenty per cent. benefited, and fifty per cent fatal, and in none of the fatal cases was death the result of the operation; moreover, there is a bright prospect of the case reported this evening bringing the per cent. of cures up to forty.

* The report of Stewart's second case appeared in the *American Journal of the Medical Sciences* for August, 1896.

VEGETABLE DYSPEPSIA.

By. W. A. Walker, M.D.,
New York.

Vegetable foods have a tendency to malfermentation when the salivary ferments are deficient in quality or quantity, and this gives rise to flatulence, heart-burn, eructations, and other disagreeable symptoms, to say nothing of resultant irritations which lead to permanent impairment of the mucous coats of the stomach and intestines. Then we have the condition which has been usually designated as dyspepsia. This condition leads to a state of mental depression highly favorable to the production of various forms of neurotic disturbances.

Whatever may be the cause of indigestion—bad cooking, hasty eating, improperly selected foods, or what not—it is necessary in its proper treatment not only to give dietetic directions, but to furnish ferments to take the place of those deficient or impaired. In starchy or vegetable indigestion we have an infallible agent in diastase, and the only reason the profession has not fully appreciated its value is on account of the antiquated but still commonly believed theory that diastase is destroyed soon after reaching the stomach. The theory that is now gaining ground—and it is based on indisputable facts—is that it takes at least thirty minutes after the completion of an ordinary meal for the

acidity of the stomach contents to reach the point at which diastatic digestion is destroyed.

One of the most convenient methods of treating vegetable dyspepsia, especially in children—and they are notoriously poor starch-digesters—is by giving diastase in their oatmeal or mush, or sprinkled on bread.

Bread can be made much more digestible by having diastase added to it, in the proportion of five grains to a pound of flour, mixed with the dough, and by this method the soluble matter in ordinary bread is increased fifteen to forty per cent. This bread is superior to ordinary bread in every way, and makes a delicious toast. The toast powdered and added to milk makes a most excellent food for infants.

One of the old-time theories was that by prolonged boiling (the old flour-ball process) starch was changed into dextrin; but this is not true, as dextrin does not begin to be produced until the temperature of 250° F. is reached; hence it is impossible to make dextrin by any wet process of cooking. Repeated and prolonged boiling doubtless splits the starch granules to a certain extent and renders them more soluble, but it does not produce dextrin. Starch must be converted into maltose before it is ready for assimilation by the absorbents. The salivary and pancreatic ferments perform this function in the normal digestive tract; but one essential difference which should not be lost sight of in considering a diet for children, is that the younger the child the less perfect are the salivary and pancreatic secretions. Hence the value of diastase in the treatment of children who have indigestion or are badly fed. Fat and oils are used in the economy for heat and force, and only to a limited extent produce a reserve supply of fat, which comes from starchy foods. Diastase, which is a starch-digester, is, therefore, a fat-producer. Hence it is nearly always true that people, especially children, who have amylaceous dyspepsia, are thin and badly nourished. They are the victims who succumb most readily to the germ of tuberculosis, as their blood does not have enough vitality to resist the infection.

The prevention, and often the sole hope of the cure, of consumption, lies in curing the digestive disorders; the low assimilative powers must be strengthened, and the blood-current must be increased in volume as well as in its constituent elements. There is no more fruitful field of study, and none so much neglected by the general as well as the special practitioner, as that of amylaceous or vegetable dyspepsia, and until quite recently the literature on the subject has been quite meagre, and not only unsatisfactory but misleading.

The only reliable supply of diastase in the past has been the limited and uncertain quantity found in malt extracts.

The new isolated diastase, known as taka-diastase, is stable and powerfully concentrated, and according to reliable authority is capable of converting one hundred times its weight of dry starch into sugar in ten minutes.

In giving this enzyme, we should bear in mind that its function is to aid, and in fact supplement, the ptyalin of the saliva; and it bears no relationship whatever to duodenal digestion except that the more perfect the preliminary digestion of starches in the stomach, the less work there is to be done in the duodenum.

The theory that pancreatic extracts and diastase ought in some mysterious way to find their way through the stomach into the duodenum and there begin their work, is too absurd to be entertained.

If patients with amylaceous indigestion will follow these rules, the result will be satisfactory:

1st. Omit from the dietary, as far as practicable, pastry, condiments, syrups, and sugars.

2d. Chew the food, especially bread and vegetables, slowly and thoroughly.

3d. Take 2½ grains of taka-diastase immediately after eating.

4th. Avoid any habit which causes the saliva to be expectorated instead of swallowed, for at least an hour after eating.

5th. Correct any temporary excess of acidity in the stomach by a dose of bicarbonate of soda.

57 West Ninety-third Street.

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*RESPIRATORY EXERCISES IN THE TREATMENT OF DISEASE.**

By Harry Campbell, M.D. Lond., F.R.C.P. Lond.

In respiratory exercises we possess a very potent therapeutic agent. By their means we are able not only to develop the lungs, but also to influence in a very marked degree

*Abstract of a paper read in the Section of Medicine at the annual meeting of the British Medical Association, July 27-31, 1896.

the circulation of blood and lymph, as well as the functions of the abdominal and pelvic viscera. The advantage of well developed lungs are for the most part recognized: the greater the respiratory capacity, the more adequately are the respiratory functions carried on, and the less is the liability to phthisis, bronchitis, and other pulmonary diseases. But another advantage, much overlooked, attaches to good pulmonary development, *i.e.* the facility which large lungs afford to the circulation through them: the greater the vascular capacity of these organs, the less is the work thrown on the right heart. Now all the diseases of the left heart, but especially affections of the mitral orifice, tend to cast extra work on the right heart. Hence the great importance, in all cardiac diseases, of securing the maximum development of the lungs; and in no way can this be more effectually done than by respiratory exercises systematically carried out. In this manner we can, in a short time, increase the pulmonary capacity in a marked degree.

The respiratory movements favor the circulation of blood: with every inspiration, blood is sucked into the right heart, while the pulmonary flow is at the same time quickened. They further aid the lymphatic circulation, pumping the lymph from the peritoneal cavity into the pleuræ, and from the latter and from the pericardium into their respective lymphatics, and hurrying on the lymph in this way. Such aids to the lymph-flow are of the utmost importance in many diseases, but above all in heart disease.

The rhythmic movements of the diaphragm not only assist the flow of blood and lymph in the abdominal and pelvic cavities, but further influence the functions of all their contained viscera by rhythmically compressing and (in many cases) dislocating them. It will thus readily be seen that by means of forcible and long-continued diaphragmatic breaths we are able to exercise a profound influence upon the abdomino-pelvic viscera. In various forms of dyspepsia, as in "torpid liver," I have found the greatest benefit from their use.

Respiratory exercises are very helpful in many functional diseases of the nervous system; the benefit in these cases being largely due to their effect upon the circulation of blood and lymph within the cranium, as well as upon the functions of the great abdominal and pelvic viscera. One neurosis which may be benefited in this way may be specially referred to, namely, morbid flushing of the face —a disorder which (incredible as it may seem) may cause the direst mental agony.

One of the greatest benefits to be derived from respiratory exercises is increased mobility of the chest. This has many advantages. I will instance one. The chief trouble in emphysema is the difficulty of adequately emptying the lungs. This is not due to the incompressibility of these organs, since they can be compressed by a contraction of the abdominal muscles whereby the diaphragm is thrust upwards. It is due to fixity of the bony chest. The mean size of the latter is regulated by (*a*) the traction of the elastic lungs, which tends to diminish it, and (*b*) the tonic contraction of the costal elevators, which tends to increase it. In emphysema factor *a* gradually diminishes, factor *b* gaining the upper hand. Consequently the mean size of the bony thorax increases in emphysema. Now the chest tends to become fixed in the mean position. Hence in emphysema it becomes fixed in the expanded position, and adequate expiration is then impossible. But if in the early phases of emphysema we systematically put the patient through a series of expiratory costal exercises, we mitigate this fatal tendency to expansion.

There are three forms of breathing: (*a*) diaphragmatic, (*b*) lower costal, and (*c*) total costal (in which all the ribs are elevated). The two former can take place quite independently of one another; and the latter can be performed independently of diaphragmatic breathing. A well developed man (I cite a specific instance) is able to inspire 400 cubic inches with a total inspiration, 270 with a combined lower costal and diaphragmatic, 170 with a pure diaphragmatic breath. If the lower ribs are elevated and the chest thrust out, only 100 cubic inches can be inspired by the latter method. After a full "total costal" inspiration, no further breath can be taken in by means of the diaphragm, the lungs being then incapable of further expansion.

It is stated by Oertel that with a diaphragmatic breath the bases of the lungs are more inflated than the apices. We must remember, however, that the pleuræ enable the lungs to glide freely over the chest-walls; and therefore the lungs tend to be equally expanded in all their parts, no matter what kind of inspiration is adopted. After pleural adhesions, however, such is not the case: under these circumstances those parts of the lungs expand most where the movement of

the overlying chest is greatest. Hence with extensive pleuritic adhesions the apical parts are unable to expand during ordinary breathing, which is combined lower costal and diaphragmatic; and this predisposes them to disease. In all such cases the patient should frequently practice total costal inspirations.

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*URANIUM NITRATE IN DIABETES MELLITUS.**

By Samuel West, M.D., F.R.C.P.,
Assistant Physician to St. Bartholomew's Hospital; Senior Physician to the Royal Free Hospital, London; etc.

Further experience during the last twelve months has confirmed the general results which I stated in my paper read before the British Medical Association last year.

The effects of the drug are, (1) to diminish the thirst, (2) to reduce the amount of urine passed, and (3) to reduce the percentage of sugar. Like all the other drugs used in the treatment of diabetes, uranium nitrate does not influence all cases equally favorably.

The clinical investigation of the action of drugs in diabetes mellitus is not by any means an easy one. It involves time and care to eliminate the many disturbing factors in the results. In hospital cases I have taken the patients into the ward and kept them for some time upon diabetic diet, until the benefits derived from dieting, rest, freedom from care and fatigue had fully shown themselves. As soon as the patient appeared to have arrived at a condition of equilibrium, the drug was administered, in small doses at first, which were afterwards gradually increased. In private practice the results are not so conclusive, and the difficulties to be surmounted are often considerable.

Reference is first made to one of the cases recorded in last year's paper, Mrs. W., who had an attack of severe influenza, during which time the drug had to be suspended. The percentage of sugar, which had been almost nothing, rose during the influenza to between four and five, subsequently falling back again to about four. She did not resume the drug, partly because she did not appreciate the difference between three and four per cent. of sugar and practically none, and because the disease had not been cured by the drug, and for another reason—because she thought the medicine upset her digestion from time to time. She is now passing about three or three and a half per cent. of sugar, but in other respects is fairly well.

Among the new cases to be recorded in the present year, there are none which present such striking features as those which were published last year; still, several show the same general improvement, though not in the same degree.

Case 1 was an instance of acute diabetes in a woman of twenty-two years. On admission she was passing ten pints of urine and giving eight per cent. of sugar. After being dieted for three weeks in the hospital the amount of urine was reduced to four pints and the percentage of sugar from eight to six; but during all this time there were great fluctuations in the amount of urine and in the percentage of sugar, such as are usually seen in bad cases of diabetes. After being placed upon uranium nitrate, the doses being gradually increased to five grains three times a day, the percentage of sugar was reduced to four, the patient was greatly improved and gained ten pounds in weight, and the irregular fluctuations above referred to entirely disappeared. On leaving the hospital a short time afterwards the percentage was three and a half and the quantity of urine three and a half pints. She went home to the anxieties and work involved in the care of a family of small children, was unable to continue the dieting, and I believe died not long after.

The second case, a woman of forty-four, was passing seven pints of urine and seven per cent. of sugar, with considerable fluctuations between a maximum of 8.3 per cent. and a minimum of 6.5. After being dieted in the usual way, the percentage fell to 6.8, and then uranium nitrate was given, with the result that the percentage fell to 4.6. She greatly improved in the hospital, and continued to take the drug some time after she left.

The third case was that of a young man aged twenty-five, a case of acute diabetes of short duration. He was passing, on admission, seven pints of urine, with a percentage of between six and seven of sugar. Ordinary diet produced but little effect upon the quantity of urine and not much upon the percentage of sugar. Under the influence of the drug the percentage fell from six to between three and four. Ten grains of the drug were taken three times a day without any inconvenience, the appetite remaining good, and the weight increasing. Towards the end of his time he was allowed to have four to six

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* Abstract of a paper read at the annual meeting of the British Medical Association, at Carlisle, July 27-31, 1896.

ounces of bread or toast. The drug was continued, but under this diet the percentage rose only to four and a half—that is to say, not as much as might have been expected. He has been taking the drug now for a long time as an out-patient, is considerably heavier than when he was in the hospital, and is able to do his work well; and although under irregular conditions of diet the percentage of sugar is heavier, still he believes the drug is a necessity to him, and he is much better and abler for his work while taking it.

The fourth case was that of a man aged fifty—a bad case of only six months' duration. The urine was about five pints, with six per cent. of sugar. He was dieted as strictly as possible, but we could not get him to do without bread. The uranium was increased up to ten grains three times a day, which he took without any inconvenience, and he gained several pounds in weight. Under the combined action of the drug and diet the quantity of urine was reduced about a pint, the specific gravity remaining much the same, and the percentage fell rather more than one. The most marked feature about this case was that the irregular fluctuations, which had been so marked soon after his admission into the hospital, entirely disappeared, and the quantity of urine and sugar became fairly constant.

The last case was that of a private patient, aged forty-one, who had been the subject of diabetes for about four years. In this case, I regret to say, the drug did not prove a success. He was never able to take more than about three grains three times a day, and while taking the drug the lowest percentage of sugar reached was 2.3. As long as he was under my observation the percentage averaged about three before he began to take the drug. Before he came under my observation the analyses had been made very irregularly, but it was stated that the percentage had on occasions been lower than this and that on some days sugar had been entirely absent. These statements, however, I cannot vouch for. The drug, in the doses given, seemed really to have little or no effect, and, as the digestion became somewhat disturbed, it had to be ultimately suspended. The failure of the drug in this case may be attributed, I think, in some degree to the idiosyncrasy of the patient, who was unable to take any but very small doses, and even those for only a brief period.

The general conclusions that may be drawn from these additional cases are the same as those I expressed last year, viz.: that we have in uranium nitrate a drug of considerable value in the treatment of diabetes mellitus, though, like all other drugs, it cannot be relied upon to produce equally good results in all cases indiscriminately.

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*THE PATHOLOGY OF ITCHING, AND ITS TREATMENT BY LARGE DOSES OF CALCIUM CHLORIDE.**

By Thomas D. Savill, M.D. Lond.,
Clinical Assistant to the Blackfriars Hospital for Diseases of the Skin; Physician to the West End Hospital for Diseases of the Nervous System; etc.

Dr. T. D. Savill gave an extempore synopsis of his contribution on "The Pathology of Itching, and its Treatment by Large Doses of Calcium Chloride, with Illustrative Cases." After referring to the troublesome nature of the sensation and the many different forms it may assume, the apparatus concerned were described. It was shown that the symptom of itching was an evidence of an irritation of the sensory nerve-endings, or of the nerve-fibrils in the skin. Etiologically considered, itching might be classified into primary and secondary pruritus. The latter corresponds to the pruritus which attends and is secondary to the great majority of eruptions, and is characterized by being more or less localized to the causal skin lesion. It is explained by the involvement of the nerve-endings, and the sensory nerve-fibrils in the skin, in the lesion which produces the eruption. It is also proportionate in severity to the intensity of that lesion. The reason that itching is absent in some strumous and syphilitic eruptions is explained, the author thinks, either by their being suppurative and therefore destroying the sensory terminations, or by the nerve structures adapting themselves by reason of the indolent or chronic nature of the inflammation.

Illustrations of primary pruritus are found in the itching of jaundice, diabetes, in pruritus senilis, and in all skin conditions where skin-itching is the primary and often the sole local feature of the case. The author also believes that lichen urticatus and prurigo come under this heading; they are characterized by a tendency to become general or diffuse and by the eruption, if there be any, coming out either simultaneously or subsequent to the pruritus, never before. The various hy-

*Abstract of a paper read in the Section of Medicine at the annual meeting of the British Medical Association, July 27–31, 1896.

potheses that have been suggested in explanation were then discussed, and the conclusion was arrived at that it is a blood change which is the real casual factor of the nerve irritation in primary pruritus, on the following grounds:

1. The nerve-endings and fibrils are always bathed in lymph.

2. Primary pruritus is always diffuse; any localization can generally be accounted for by scratching or rubbing of the clothes, as across the shoulders.

3. It has a tendency to be periodic and paroxysmal, and, in diurnal attacks, to occur after meals.

4. It is often produced and aggravated by certain dietetic articles, some of which are known to contain blood-poisons, and the action of all of these is difficult of explanation unless it be assumed that they act through the blood.

5. In the pruritus of jaundice, diabetes, gout, etc., a blood alteration is known to exist, and in all of them the conditions for a blood change can, by inquiry, be revealed.

6. Certain drugs, notably morphine, hypodermically injected in large doses directly into the lymph, produce general pruritus.

7. The typical eruption secondary to pruritus, namely prurigo, always has approximately the same characters, and this eruption resembles in its elements those produced by drugs and blood-poisons.

8. The remedies hitherto found most efficacious in primary pruritus are those which have a sedative effect on the nerves, or else a direct effect on the blood; *e. g.*, the carbolic acid suggested by Hebra.

9. Calcium chloride, which suggested itself to the author on the foregoing grounds, has been proved to have a marked action on the blood by increasing its coagulability.

As regards *the nature* of the blood change, it is difficult to arrive at a conclusion in the present state of our knowledge.

The author gives seven illustrative cases, and remarks in conclusion:

As to the efficacy of calcium chloride in relieving the itching, the patients themselves —who are in these circumstances the best judges—have no doubt whatever, and are loud in their expressions of gratitude. The cases reported are selected as illustrations because they were less complicated, and because the pruritus was in all of them a most pronounced symptom. In all of these cases the itching was relieved, and the eruption, if any existed, disappeared at the same time. I have not so far met with any absolute failures, though sometimes the dose has to be considerable and continued for several weeks, especially in long-standing cases. In Cases 3, 4, 6, and 7, a cessation of the remedy was attended by a return of the symptoms, which disappeared again on its resumption, all the surrounding conditions remaining the same all the while. This, which corresponds to Mill's double method of agreement and difference, is the best kind of evidence obtainable as to the efficacy of any drug. This was particularly noticeable in Case 6, where it occurred on two occasions.

Four of these cases are of special interest because other remedies had been previously tried and had failed to give relief either for the eruption or for the itching: thus, in Case 3, warm tar-baths, ointment, arsenic, and bromide of ammonium; in Case 4, tar-baths, and a mercury-and-tar ointment; in Case 6, sulphate of quinine in large doses; in Case 7, arsenic, sulphate of quinine, tar-baths and lotion, over a long period of time, had all been tried without producing any evident amelioration. In several of these cases, though I have no records showing which ones, a regulation of the dietary had also been adopted, but until the calcium chloride was administered no benefit had ensued. The opportunity of trying the remedy in children for the itching that accompanies urticaria has not presented itself, but there is every reason to believe it would be equally efficacious in them also.

Mode of Administration.—The doses must be considerable, not less than twenty grains three times a day, and should be gradually increased; thirty and even forty grains have often succeeded where less had failed; the Pharmacopœia dose is fifteen to twenty grains. If administered after meals and in a wineglass of water, it is surprising how little these small doses upset the stomach; and I have never known vomiting to be produced. Patients sometimes complain that it makes them thirsty; and to cover the salt taste it is best administered with a drachm of tincture of orange-peel and one ounce of chloroform-water, in which form it is really an agreeable medicine and would be well taken by children. It is important that the diet, at the same time, should be regulated; no beer, sugar or sweets being allowed, and meat only in very moderate quantity. The recovery of Cases 3 and 6 was certainly retarded by neglecting this. It is also important to keep the bowels acting freely. This was evident in Case 1. Although improve-

ment is generally noted after the first dose, complete recovery is sometimes not obtained until the blood becomes saturated with the remedy, and the dose must be increased until this is accomplished; in long-standing cases, perseverance is necessary—for example, in Case 6. Success may follow doubling the dose if twenty grains does not succeed. The remedy seems to take longer to act in old people and inveterate cases—Case 7 for example, though Case 2 yielded more readily. When recovery is obtained the dose should be gradually, not suddenly, reduced; and it is very important that the remedy should be continued for at least one to three weeks after all symptoms have disappeared.

It is not possible yet to indicate precisely which cases are most suitable for this treatment, but it is worth while trying in all cases where itching is a pronounced feature; and if this small contribution shall be the means of affording relief in this troublesome condition, my object will have been achieved. In most of the cases an actual cure has resulted, but in a few of very long duration, including Case 7, relief was obtained only so long as the drug was being taken. Nevertheless, cure will probably result with perseverance, even in these.

THE TREATMENT OF PHLEBITIS.

We are told by the *Journal des Praticiens* of May 2, 1896, that the particular indications in the treatment of this condition are, first, to relieve the pain, which as an initial symptom is often severe; second, to prevent as far as possible embolic accidents which will gravely complicate the case; third, to produce absolute rest of the part affected as long as the phlebitis lasts. Pain and swelling usually appear about the same time, and in the leg, where the trouble most commonly arises, it will frequently be found that the obstruction exists in the hypogastric or in the common iliac vein. At first, care should be taken that the swelling be not thought to be a rheumatism or a neuralgia, as the paroxysmal character is apt to mislead one. For the amelioration of the pain it is best to wrap the part in a soft dressing surrounded by a gum cloth and to have the limb somewhat raised in order to facilitate the return of blood from it to the trunk. Any compression will make the pain much worse. In some instances large poultices composed of linseed meal, if applied to the limb, do good. In other instances the following prescriptions may be used as applications to the parts affected:

℞ Extract of belladonna, ʒc grains;
Extract of hyoscyamus, ʒo grains;
Benzoated lard, 1 ounce.

Or,

℞ Chloroform, 2 drachms;
Camphor liniment, 2 drachms;
Glycerin, 4 drachms.

Or,

℞ Ichthyol, 15 grains;
Lanolin, 1 ounce.

If the pain is very much localized, the application of the ice-bag to the part may give relief, but it should be remembered that this application in the dressings of a poultice may favor the development of cutaneous gangrene.

Hypodermic injections of morphine are not to be resorted to if they can be avoided, as such patients are generally feeble.

The prophylactic treatment of this condition consists in absolute repose. Should the functional loss of power persist in the limb, a tight flannel binder should be applied about it. Massage in moderation should be employed, and faradization should be applied to the muscles. A visit to thermal springs is also of value in these cases during convalescence.

SARCOMA OF THE KIDNEY.

Nephrectomy offers the only hope of saving the life of children suffering from renal sarcoma. The immediate results of this operation have vastly improved during the past ten years. In 1885 Gross gave the mortality as fifty-six per cent.; Fisher in 1889 stated it as forty-eight per cent.; while Lewis in sixty cases has found it to be twenty-eight per cent.

Ultimate results, however, are not as favorable. In a large proportion of those who recover from the operation fatal recurrence takes place. In Lewis's sixty cases no less than thirty-two are known to have died from recurring sarcoma, the result of many cases not being known. Three, however, have passed the three-year limit without a return. Although operation offers the only hope of saving life, and unquestionably has the power in many cases of prolonging it, in the present state of our knowledge the probability that a child suffering from renal sarcoma will live to adult life is extremely small.—*Archives of Pediatrics*, May, 1896.

The Therapeutic Gazette

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Leading Articles.

ON THE VALUE OF PEPTONIZED FOOD.

At this season of the year the physician with a general practice is called upon to treat many cases of gastro-intestinal disorder in both adults and children, and he is very apt to resort to the various preparations derived from the pancreas with the object of peptonizing milk or other nitrogenous food which he may prescribe for his patient. In many instances the use of the extract of the pancreas for this purpose is followed by the most beneficial results, and it cannot be denied that the introduction of peptonized food into the diet list of the sick was a distinct advance in hygiene and therapeutics. In certain cases where patients seem utterly unable for a time to digest and assimilate food, the administration of pancreatized milk or eggs by the mouth or by the rectum undoubtedly often saves life. On the other hand, as with every good thing in therapeutics, we must not forget that these peptonizing liquids, powders and other preparations should not be used for an indefinite time in any case, and that their value is greatest rather in acute than in chronic illness. It is a great temptation to the physician, the parents, and the nurse, when a child has just recovered from a severe attack of gastro-intestinal indigestion, which has been largely set aside by the use of pancreatin, to continue to use predigested food. But this is a temptation which must be resisted and the child be gotten back to a diet of undigested food as rapidly as possible, in order that the normal digestive function may be called into play. We are apt to lose sight in practice, because of the good results we frequently obtain with pancreatic extracts, of the facts which have been accumulated by various scientific and clinical observers with regard to this point.

On the one hand we have the experiments of Polsz, who, using an artificial milk compound, in which the proteids were artificially digested, was enabled to make a puppy increase its weight and grow in the most extraordinary manner in the brief space of eighteen days, and those of Maly, who has reached practically identical results in the case of pigeons.

Other experimenters have confirmed these results, and notable among them is Sir William Roberts of England, who has done so much in regard to the popularizing of peptonized foods and who has, on the other hand, with his usual clear perception, recognized the fact that there are limitations to their use. With the object of determining the exact effect of the use of pancreatized foods, he undertook a series of experiments to decide two questions: First, is artificially digested or peptonized milk alone sufficient to sustain nutrition? Second, is it as efficient in this respect as natural milk? He took four kittens of the same brood, eight weeks old, having found that kittens of this age thrive perfectly on an exclusively milk diet. Two of the kittens were fed on natural milk, and two on milk previously digested by pancreatic extract, care being taken that the digested milk was thoroughly peptonized. The experiment was continued for a period of twenty days, and the quantity consumed by each pair of kittens was as nearly as possible identical. All four remained in perfect health and took their nutriment greedily. As a result of this experiment, however, it was found that the kittens which took pancreatized food throve no better than those which took the non-pancreatized, seemingly proving that natural and pancreatized milk were equally nutritious.

The next experiment consisted in giving normal milk to two of the kittens, and only pancreatizing to a slight extent the milk for the two kittens which had received thoroughly peptonized milk from the first. As a result it was found that the kittens receiving peptonized food did not thrive as well as those which received natural food; proving, to the mind of Sir William Roberts, that the use of completely pancreatized food for a period of twenty days had produced such a condition of rest in the normal digestive apparatus of the kittens that when called upon to carry out the normal digestive processes their digestive organs were unequal to the task. He therefore concludes—and, we think, very properly—that, except in extreme cases where the digestive power is wholly lost or in complete abeyance, it is more advantageous to use food which has been subjected to only partial artificial digestion than to use that in which the process has been carried out to completion, for if the patient possesses any digestive power at all it is better that that power should be kept in exercise than allowed to deteriorate from total disuse. Further, it is not advisable in most cases to continue the pancreatizing of food for any greater period than is absolutely necessary for the maintenance of the nutrition of the patient.

THE TREATMENT OF AORTIC ANEURISM BY ELECTROLYSIS.

We wish to call the attention of the readers of the THERAPEUTIC GAZETTE to a very remarkable case of aneurism which was treated by electrolysis by Dr. Hershey, of Colorado, who reports his method in this issue of the GAZETTE. This case is of particular interest, not only because of its own peculiarities, but also because of the rarity of the operation as recorded in medical literature, and the fact that in the August number of the *American Journal of the Medical Sciences* another and earlier case is reported by Dr. D. D. Stewart, of Philadelphia, illustrations of which case, taken three years after the operation, are attached to this editorial note, the patient having entered the ward of the writer thirty-five months after electrolysis had been done by Dr. Stewart.

As will be noted in Dr. Hershey's paper, the successes which have been attained by this means of treatment are not as great in number as we could desire, but they have been sufficiently frequent and life has been sufficiently prolonged in the successful cases to make the operation well worthy of consideration in this most dangerous and hopeless condition.

These illustrations are taken from a forthcoming volume on "Practical Diagnosis," by the courtesy of the publishers, Messrs. Lea Brothers & Company, of Philadelphia.

FIG. 1.—Case of aortic and innominate aneurism, with erosion of the clavicle and ribs. This case is of extraordinary interest because this picture was taken thirty-five months after Dr. D. D. Stewart had caused an arrest of the growth of the aneurism by electrolysis. The man finally entered the Jefferson Medical College Hospital because the subjective symptoms of aneurism were returning, and a spot of softening and pulsation was to be felt in the lower right-hand border and at the edge next the xiphoid cartilage. This same patient is seen laterally in Fig. 2.

FIG. 2.—Bulging of the chest-wall, with erosion of ribs, from aortic and innominate aneurism.

HAS THE INJECTION OF AIR BEEN RESPONSIBLE FOR DEATHS FOLLOWING THE USE OF ANTITOXIC SERUM?

The fact that a few scattered instances have been reported in which sudden death has followed the injection of the antitoxic serum of diphtheria, has called forth many hypothetical conjectures as to the reason for this serious accident. Among others it has been thought that death might have been produced, in some instances at least, by the accidental injection of air with the serum into a vein instead of into the subcutaneous tissues. This supposition naturally calls our attention to our personal experience concerning the influence exercised by air when it enters the blood-stream. For many years it was thought by surgeons, chiefly because the idea was passed on from author to author and from teacher to teacher, that the entrance of a very minute quantity of air into the veins was followed by the most distressing symptoms, and in many instances by death. The writer of this editorial distinctly recollects that while a medical student he was directed as a part of his teaching to see that in no instance did the smallest globule of air remain in the barrel of the hypodermic syringe before an injection was given, lest by the double accident of puncturing a vein and injecting the air the patient's life might be put in jeopardy.

Since that time a number of valuable studies have been made as to the influence of air introduced into a vein in one of the lower animals, the most notable of which was perhaps that of Dr. Nicholas Senn; shortly after the publication of Senn's paper, Hare gave the results of similar experiments upon dogs. The experiments very conclusively proved that minute quantities of air entering the circulation were by no means as death-dealing as was generally supposed. Indeed, the latter investigator found, at first by accident, and afterwards by direct experiment,* that very large quantities of air might be injected into the jugular vein of a dog without producing any symptoms whatever. Thus he repeatedly injected as much as twenty to forty cubic centimeters of air directly into this vein in such a way that it must have passed in bulk directly into the cardiac cavities. At the same time blood-pressure tracings of the action of the heart and circulation were taken. Later on he demonstrated these facts before the Philadelphia County Medical Society, injecting the air in these large quantities into the jugular veins of two dogs, weighing less than twenty pounds apiece, which were immediately set free and which ran about the room quite unaffected by the operation.

On the other hand it seems to be proved by some experimenters that certain animals are more susceptible to air embolism than are dogs. Thus it has been found that monkeys very frequently become seriously distressed if large quantities of air are introduced into their circulatory apparatus. We repeat, however, that all the scientific investigations with which we are acquainted prove that minute quantities of air entering the circulation are not to be considered as dangerous as has been taught.

Our attention has been more recently called to this subject, particularly in connection with the injection of antitoxic serum, by a paper by Drs. Seibert and Schwyzer, of New York, who conclude from experiments on guinea-pigs that the sudden deaths reported after antitoxin injection were caused by injected air and not by anti-diphtheritic serum. For obvious reasons we have read this paper with very great interest, and are forced to entirely disagree with the authors in their conclusions —first, because we do not think their experiments justify the conclusions which they reach; and second, because it is incredible that deaths should result so frequently, comparatively speaking, from the injection of air with serum, and so seldom from the injection of air with various other medicaments which are commonly employed in hypodermic medication.

First, in regard to their experiments. Using full-grown guinea-pigs, which nevertheless are very small animals, they injected as much as from two to four cubic centimeters of air into the jugular veins of these animals, thereby, as they well state, practically filling the cardiac cavities with air, to the displacement of the blood not only for one beat of the heart, but for a number of beats, since the heart of this small animal naturally contains but a very minute quantity of blood, even in its greatest diastole. In other words, the quantity of air which they injected into a guinea-pig would be equivalent to the injection of about four to six ounces of air into the jugular vein of a child weighing fifty pounds, a quantity which could not possibly be introduced in any syringe simultaneously with the injection of anti-diphtheritic serum. Their experiments, therefore, while proving

* See THERAPEUTIC GAZETTE for September, 1889.

that massive quantities of air injected into the jugular vein are fatal to guinea-pigs, in no way prove that minute quantities of air are fatal to these animals, or that minute quantities of air injected with anti-diphtheritic serum underneath the skin of a child can possibly produce the results which they claim for it.

The second objection—in regard to the possibility of the entrance of air into a vein simultaneously with the hypodermic injection—seems to us of considerable importance, for the occasions on which the hypodermic needle punctures a vein must be exceedingly rare in connection with anti-diphtheritic serum as compared with ordinary medicinal injections, for the serum is usually injected into a portion of the body devoid of large veins, while the medicinal substance is usually injected into the arm or leg, where the veins are numerous, large, superficial, and easily entered. So far as we know, there is no case on record in which death has occurred from the injection of a minute particle of air with morphine or any other drug during the practice of hypodermic medication. We think, therefore, that some other explanation of this grave sequel to the injection of anti-diphtheritic serum must be sought for than that which is offered by the authors quoted.

In this connection it may be well to call attention to the fact that the reported death of the little son of Dr. Langerhaus, of Berlin, following upon the injection of antitoxic serum, has been explained by the fact that the child had just completed an unusually heavy meal, and that in the attempt to vomit during the faintness following the antitoxin injection, he drew into his air-passages some of the contents of his stomach, with resultant asphyxiation.

THE VALUE OF EXPERIMENTS UPON ANIMALS TO MODERN MEDICINE.

In the editorial columns and elsewhere in the THERAPEUTIC GAZETTE for June, 1896, we called attention to a bill known as Senate Bill 1552, which on its surface was apparently designed to prevent cruelty to animals in the District of Columbia by ignorant persons, but in reality was intended as a blow against what has been popularly, but erroneously, called "vivisection" in that District and in other States and Territories in the Union. If this law passes in the National Congress it will be a precedent in the hands of enthusiastic but misguided agitators elsewhere.

It seems hardly necessary to address so intelligent an audience as the readers of the THERAPEUTIC GAZETTE upon the value of the work which it will be impossible to carry out should this bill become a law. While there may be some members of the profession who consider that many original investigators in the fields of bacteriology and infectious disease are unduly enthusiastic and inclined to place too great weight upon the results of their studies, no one can deny that the general trend of experimentation in the last twenty years has been for the great advancement of scientific medicine and therapeutics. To those who are particularly interested in this subject we wish to cordially recommend an exceedingly able address delivered as the annual discourse before the Massachusetts Medical Society at its one hundred and fifteenth anniversary, in June, 1896, by Dr. Henry P. Bowditch, Professor of Physiology in the Harvard Medical School—a gentleman whose scientific and intellectual training, both in this country and abroad, combined with his judicial frame of mind, renders him capable of presenting facts for and against vivisection in a manner which must command the respect even of those who are opposed to him.

After discussing the efforts which have been made in Massachusetts and elsewhere to prevent what has been called "vivisection" in that State, he first points out that no greater error exists than to suppose that the medical profession, which is noteworthy for its humanitarian principles and tenderness to the sick, would look with favoring eyes upon any individuals who could be thought guilty of inflicting unnecessary pain upon any of the lower animals; and yet it is the medical profession which practically universally supports and encourages within proper limits the use of the lower animals for the study of infectious and other diseases.

On the contrary it may be shown that those who are most active in the so-called antivivisectionist cause apparently lose sight of all humanitarian principles, and Dr. Bowditch quotes no less an enthusiast than the late Henry Bergh, who in a public lecture made the following statement concerning Dr. Robert McDonald, who saved a dying person by the transfusion of animal blood: "In other words, this potentate has discovered the means of thwarting the decrees of Providence where a person was dying, and snatching

away from its Maker a soul which he had called away from earth." We greatly fear that the entire medical profession, on this principle, are guilty many times a day of committing a crime against the will of the Almighty—a crime, by the way, which most of the human race also seem bent upon committing—and we venture to state that when Mr. Bergh was in the position of which he speaks he and his friends opposed this will of the Almighty with never-ceasing constancy.

As an instance of what enthusiastic but misdirected effort in the protection of animals from cruelty may bring about, it is a fact to-day that in England, where the anti-vivisection crusade has been most successful, it is penal to use domestic animals in any way cruelly, but one may torture wild animals in whatever manner he desires, *provided it is not for scientific purposes.* Thus the trained medical scientist can only make experiments upon living animals, even if they be under the influence of anesthetics, provided he has a permit issued by the English Government; but any English sportsman can chase comparatively tame deer, or other semi-wild animals, with dogs and on horseback until they die from fright or exhaustion or from the wounds inflicted by the rifle or by the attacks of the hounds. Any kind of bird may be shot, and no law requires that the gunner see to it that the animal is actually killed—and for every instance in which a bird is killed directly there must be many instances in which it escapes to some hiding-place, where it dies a slow death of torture either directly from its wounds or as the result of exposure to its enemies. In nearly every instance this pursuit is resorted to for sport alone, with no other benefit to mankind than that which is derived by the individual from spending a number of hours in the fresh air in healthy exercise; whereas the benefits which result in reducing the sum of suffering to the entire human race are curtailed by law.

Dr. Bowditch cites an instance in which two methods of deciding upon the healthfulness of a certain impure water-supply to the inhabitants of cities were carried out. One experiment was made by the water company which supplied a large metropolis with infected water, with the result that a very great number of persons fell ill and many hundreds of deaths occurred, thereby proving scientifically that infected water could produce a certain form of disease and death. At the same time, by the use of fourteen mice, a scientific investigator proved precisely the same facts. Yet under the law the water company was free to make its experiment, and the scientific investigator could only use the fourteen mice under strict limitations and supervision.

Even supposing that pain is suffered by the animals upon which experiments are made, is it not far better that many animals should suffer moderate pain than that one human being should suffer great pain and perhaps lose his life?

The value of the work of the Bureau of Animal Industry in the Department of Agriculture in regard to the study of Texas fever and other infectious fevers in cattle and other domestic animals is not only of value to human medicine by giving us a general insight into pathological processes, but has already saved hundreds of thousands of dollars to stock-raisers and others whose industries are crippled by our ignorance of disease in the lower animals. Is it not better that a few animals should be sacrificed in Washington under the direction of skilled and trained scientists than that thousands should be sacrificed in the great pastures of the West, year after year, through our ignorance of the cause of their suffering?

In the editorial referred to we urged our readers to write at once to their Representatives and Senators, urging them to see to it that this bill was defeated in both Houses of Congress; and as the bill will come up for action at the next meeting of Congress, in the early winter, we appeal to our readers a second time to be energetic in their efforts to cause its defeat.

THE OBJECTS AND LIMITS OF OPERATION FOR CANCER.

On this highly important topic Watson Cheyne contributes an article characterized by his usual sound knowledge of pathology and practical common sense. He points out that it is always serviceable to review the present status of medical science in some particular department and to criticise the advances that have been made, for the purpose of determining which of these advances are good and which are of doubtful value, thus furnishing a basis for further work. By the term "cancer" he implies carcinoma, and this he holds is essentially a local disease, hence theoretically curable provided it is possible to remove all the offshoots with

the primary nodule. Clinical evidence bears out this view, since in the majority of cases recurrence *in loco* takes place within a year, thus strongly suggesting that the original operation was not sufficiently extensive.

Recurrence after three years is so rare that a patient who survives for this length of time is commonly looked upon as cured. Cases are, however, sometimes met with in which late recurrences take place in parts where the cells must have remained dormant from the time of the previous operation. In support of this view, Cheyne quotes a case of Lister's, operated on fifteen years ago for cancer of the breast, a few small, hard glands in the axilla being left untouched. These nodules remained unchanged until very recently, when they formed distinct tumors and were removed; on examination they proved to be carcinomatous. Kocher reports two cases of cancer of the tongue in which the disease reappeared ten or twelve years after operation; but here the question of fresh development arises. Gross holds that of all recurrences after breast operations, not more than 2.3 per cent. take place after three years; Koenig, however, places this estimate as high as 15 per cent. In cases of intestinal cancer, late recurrences are by no means rare.

The prognosis of cancer in parts where it is in the first instance superficial, hence early observed, and where there is plenty of room for cutting wide of it, is extremely favorable: Vollmann states that in cancer of the extremities 51 per cent. are cured.

The least favorable of the face cancers is that of the lip, probably because the muscle is soon attacked. Even here the results show the curability of the disease, Wörner reporting 106 successful cases out of 223. Taking the results of a large number of surgeons, 28.1 per cent. of the cases of cancer of the lip are well three years after operation.

The uterine cancer is also distinctly curable. Thus, Martin states that as a result of total extirpation of the uterus for all forms of malignant disease, 45.7 per cent. remained well after three years.

The primary object of operation in cancer is the prolongation of the patient's life and alleviation of his suffering. These results are best attained by aiming at the cure of the disease. The first question to be considered in investigating a case of cancer is as to whether there is any possibility of curing it. Regarding the disease in this way, it is evidently necessary to remove not only the parts perceptibly affected, but also as far as possible the parts in which disease may have become disseminated although still unrecognizable: thus, if the skin is affected, a considerable portion of the neighboring tissue must be taken away. This is the more necessary where the infection has come from beneath, as, for example, where cancers of the breast reach the surface, for the dissemination in the cutaneous lymphatic plexus is often, under these circumstances, very rapid and extensive, probably due in part to the large size of the deep cutaneous plexus, which will, in the latter case, be first involved. Again, where muscles are infected the cancer cells are very early and rapidly driven along the lymphatic vessels of the muscle, and, even though there may be only one visible nodule, the whole or greater part of the muscle must be looked upon as suspicious and must be removed if there is to be anything like certainty in attaining the object of the operation. The lymphatic glands become infected early, without visible enlargement in the first place. In addition to this infection of the glands without enlargement, plugs of cancer cells very often stick in the lymphatic vessels on their way to the glands. Hence it is necessary in all cases where the disease has lasted any time or extended at all deeply, not only to remove the primary mass freely, but also to take away the whole lymphatic area up to and including the nearest lymphatic glands. Consequently, surgical intervention becomes a much more serious matter than simply an effort to get rid of the main trouble for a time and prolong the patient's life.

The first question to be considered is as to the anatomical possibility of removing all the local disease in the probably infected area. If this is possible, the next questions are: What are the chances of death as the result of the operation? and, What will be the subsequent functional result? In deciding for or against operation it must be borne in mind that the disease if untreated is inevitably fatal and often occasions great suffering.

In operations for removal of cancer of the breast, local return must be looked upon as the fault of the surgeon in not taking away enough tissue to remove all the previously existing disease. No doubt in many cases this is a fault which is quite unavoidable, owing to the excessive and undiscoverable dissemination of the disease. Recent researches have shown that the breast is a much more extensive organ than was formerly sup-

posed. Lobules run in the fat over the pectoral muscle, nearly up to the clavicle, well into the axillary line, almost on to the sternum, and downwards to the origin of the abdominal muscles. In the deeper part also the lobules of the breast are intimately connected with the pectoral fascia, and the removal of the breast without simultaneous thorough removal of the pectoral fascia inevitably means that numerous lobules are left behind. Hence the skin incision must be free, and indeed all the skin overlying the prominent part of the organ should be removed, since the suspensory ligament running between the skin and the breast contains lymphatic vessels which are frequently infected with cancer cells. In addition, the skin all around must be raised, leaving fat and lobules of the breast, as high as the clavicle, as far inwards as the middle of the sternum, downwards on to the abdominal muscles, and outwards on to the latissimus dorsi, which must be detached. In this way the primary disease, the breast, and the lymphatic vessels running in the fat and pectoral fascia towards the axilla, are separated; then the whole contents of the axilla can be cleared, finally leaving the nerves and vessels thoroughly clean as in an anatomical dissection. Then the axillary vein is explored in its lower part, its sheath being torn open through its whole length. On raising the pectoralis minor, the whole fat with its included glands and lymphatic vessels is taken away right up to the clavicle. It is important that the mass be removed in one piece, since otherwise tissues might be cut through which would lead to subsequent infection of the wound. This risk is not an imaginary one. If it can possibly be avoided, malignant tumor should not be cut into. On no account should it be removed piecemeal.

The leaving of a skin wound which can be approximated by suture is of minor importance, and when the surface is ulcerated from below there should be no hesitation in removing the skin very freely. When the tumor is adherent to the pectoral fascia, the whole thickness of the muscle should be removed. When the muscle itself is actually diseased, it should be removed in its entirety, or at least only the clavicular portion should be left. When the glands in the axilla are markedly enlarged, the question arises as to how far one should go. The pectoralis muscle can be cut across and the structures removed up to the clavicle. It has been held that when the axillary glands are enlarged the surgeon should go further and remove the glands of the posterior triangle of the neck. The first chain of glands opposes a barrier for a considerable time against the onward spread of the disease, and if it is thoroughly removed we may rest content. If the highest axillary glands are notably affected, the posterior triangle of the neck should be opened. Unfortunately, the line of infection does not so much run into the posterior triangle as along the subclavian vein into the thorax by a route which is only imperfectly accessible even when the posterior triangle is opened.

Mr. Arbuthnot Lane advocates division of the clavicle and clearing out the supra-clavicular glands in all cases, but with this treatment Cheyne does not agree, holding that when the disease is noticeable in these glands cure is hopeless. Partial amputation has been advocated, but when disease has progressed so far as to necessitate such a procedure there is no chance of curing the patient. The condition under which amputation of the arm would be necessary is the presence of a large mass in the axilla, involving the nerves, for involvement of a vein or an artery or even of both does not necessitate an operation. Cheyne has removed portions of the axillary vein to which glands were firmly adherent, and in one case removed both vein and artery without any loss of vitality or other trouble in the limb. He would exclude from operation: (1) cases of cancer *en cuirasse;* (2) cases where there is a large mass in the axilla involving the nerves; (3) cases where large glands can be felt above the clavicle; and (4) all cases where secondary cancers already exist elsewhere.

Cheyne reports twenty-one cases operated on since 1890, with no deaths since operation; twelve cured—that is, well after more than three years; and nine recurrences. This gives 57 per cent. as cured.

The second table includes those cases in which three years have not elapsed since operation, forty in all, of which 67.5 per cent. remained well and 25 per cent. recurred. While the results are steadily improving, the proportion of cases which succumb to cancer is still considerable, and will not be reduced until patients and medical men understand that there is a good chance of radical cure from early and thorough operation in mammary cancer, and that a suspicious lump in the breast, especially in elderly women, is a thing to be explored, since ninety per cent. of these swellings are cancerous.

Contrary to the usual dictum, the most favorable of all cases for operation are those of atrophic scirrhus, and the more nearly a cancer approaches the atrophic form the greater is the chance of permanent cure. In these extensive operations shock is the only risk which must be faced. In one case Cheyne observed the complication of pneumonia. There is comparatively little functional disability.

Cheyne next considers the question of cancer as it affects the mouth and throat, more especially the pharynx. Here the cancer is less accessible than in the breast. Its anatomically associated lymphatic glands are, however, much more readily reached, and metastatic deposits are infrequent. Cancer of the tongue very rapidly spreads to the muscles, and the rules already laid down would imply removal of the whole muscle and of the nearest lymphatic glands.

When the cancer appears as a superficial warty growth, the deeper muscles are not affected; the tongue is not saturated with cancer cells; hence, results of operation are favorable. It is safe to remove half of the tongue; nor need the muscles be followed quite down to the hyoid bone. In deep cancer the muscular fibres must be followed to their attachment. When the base of the tongue is affected, the cancer communicates with a large lymphatic plexus which is not unilateral, hence the glands are involved on both sides of the neck. This plexus runs into glands of the anterior triangle and about the angle of the jaw, and the lymphatic vessels seem to be specially connected with, or related to, the posterior belly of the digastric muscle. On the other hand, many of the lymphatic vessels at the anterior part of the tongue and the floor of the mouth run towards the submaxillary region, and it is there, and subsequently about the cornu of the hyoid bone, that the first enlargement of lymphatic glands is usually evident. When the disease is superficial and affects the front part of the tongue, the glands are not so early affected and it is not necessary to remove the glandular area in the first instance, but Cheyne advocates taking away the submaxillary and sublingual glands on the affected side along with the lymphatic glands so closely associated with them. Therefore it is advisable to tie the lingual artery in the neck and clear out these glands with the fat in the neighborhood, even though no nodules can be felt; the tongue is then clipped out of the mouth. The wound in the neck does not communicate with the mouth; it remains aseptic and does not add anything to the danger of the operation. When, however, the cancer extends deeply into the substance of the tongue, and especially when it is situated in the back part, some more severe procedure, such as Kocher's operation, with thorough removal of the glandular area and of the muscle down to the hyoid bone, becomes requisite. By improvement in the technique the mortality has been reduced to 3.5 per cent. Taking mild and severe cases together in the statistics of a large number of surgeons, the mortality may be estimated at from 15 to 20 per cent. Failure to cure is often due to not taking away enough of the tongue in the deep-seated cases, and more especially to failure in clearing out the glandular area properly. Kocher gives 18 per cent. of cures and 11 per cent. mortality. Cheyne gives the limits of the operation for cure of cancer of the tongue as follows: 1. Very extensive infiltration, especially toward the base. 2. Extensive involvement of the jaw. 3. Extension to the upper part of the pharynx and involvement of the carotid artery and pneumogastric nerve in a dense malignant infiltration.

Cancer of the pharynx commonly begins in the mucous membrane, over the tonsils or pillars of the fauces, spreading first upward to the soft palate, next on to the base of the tongue, and lastly back over the pharynx. Epithelioma also begins about the epiglottis and orifice of the larynx, and the third point of selection is close to or at the commencement of the esophagus. Sometimes the first symptom to attract attention is bleeding or a feeling of uneasiness or dryness about the throat, and very commonly pains shooting up to the ear, or enlargement of cervical glands. Patients rarely seek advice before the disease has spread to an alarming extent, when it is commonly regarded as hopeless. Nevertheless a considerable number of operations have been performed for cancer in this region.

The most popular method of gaining access to the tonsil is by an oblique incision (Von Langenbeck) in the anterior triangle, downward to the cornu of the hyoid bone. The cheek is then divided from the angle of the mouth obliquely downward and outward, the incision crossing the jaw just in front of the masseter muscle and joining the oblique incision in the neck. The jaw is divided in front of the masseter, and the parts are held aside, exposing the tonsillar region. A very important alteration in this method has been

made by Mikulicz: this consists in division of the ascending ramus of the jaw just above the angle, and the extirpation of the whole ramus. A third method is Von Langenbeck's subhyoid pharyngotomy, in which a transverse incision is made in front of the neck through the thyro-hyoid membrane close to the hyoid bone; the epiglottis being hooked aside, a good view of the interior can be obtained.

Preliminary tracheotomy should be avoided where possible. When the external carotid artery is ligated and the bleeding is consequently very slight, there is not much chance of blood entering the trachea, especially if the head is thrown well back. When an attempt is made to remove the tumor without division of the jaw or without ligature of the external carotid artery, and when the mass fills the throat, and more especially when it runs down to the entrance of the larynx and on to the tongue, preliminary tracheotomy is indicated. The mortality in the collected cases where tracheotomy was performed was twice that in which there was no tracheotomy. This was in the main due to septic pneumonia. In most of these fatal cases, however, the base of the tongue was involved, thus interfering with deglutition and encouraging accumulation of discharges about the orifice of the larynx. Under these circumstances Cheyne advises not only preliminary tracheotomy but also the continued use of Hahn's tubes for some days after operation, till the patient has regained the power of easy swallowing.

In the case in which the external carotid artery was tied, there was practically no bleeding at the time of operation. In most of the cases in which the external carotid artery has been tied, there has been severe and sometimes fatal secondary hemorrhage; hence Cheyne is inclined to give up this procedure unless the operation be performed in two stages, preferring to tie the branches of the vessel or control the bleeding by temporary compression of the artery during the removal of the tumor.

In these cases Cheyne holds that unless the glandular enlargements are very extensive or adherent to a variety of structures in the neck, and not merely to the sheaths of the vessels, their presence does not contraindicate operation. Indeed, they offer the patient a better chance of cure, since when they are already enlarged it is much more easy to remove the whole glandular area in one mass than when none are to be felt; and, moreover, when the enlarged glands are felt in the anterior triangle, this renders it imperative to remove the neighboring lymphatic area, and especially that under the sterno-mastoid muscle, so that if glandular recurrence subsequently takes place it will in all probability be in the posterior triangle—that is, in a part which is easily accessible to future operation.

As to the operation after the preliminary tracheotomy when this is required: the next step is the exposure of the anterior triangle and the thorough separation of the fat and glands. Through the same wound the external carotid artery and its branches can be tied or controlled. For this part of the operation the best incision is one running along the anterior border of the sterno-mastoid muscle, from the mastoid process above down to the middle of the thyroid cartilage. The skin incision cannot be too free, since the sterno-mastoid must be lifted up and all fat and glands behind it must be removed. When adhesion to the sheath is at all extensive, it is well to tie the internal jugular vein in two places, divide it, and then peel it up along with the sheath and the mass of glands in front of it. With the aid of a curved blunt instrument all the fat and glands must be detached from underneath the sterno-mastoid muscle right up to the mastoid process and well into the posterior triangle, and this material peeled off so as to leave the muscles clear. This is most important, since recurrence frequently takes place here and is difficult to remove at a second operation. Removal of the jugular causes no inconvenience; indeed, Cheyne holds that it is an advantage, since it prevents septic thrombi from being carried into the general circulation. He advises the division of the operation into two stages, done on different days; this lessens shock and diminishes the danger of secondary bleeding in case the carotid artery is tied, since this vessel lying in an aseptic wound for some days becomes buried in new tissue. This division into stages has the disadvantage of possibly infecting the wound by divided lymphatics.

With regard to the question of dividing the jaw, Cheyne states that a marked increase in the space is obtained simply by dividing the posterior belly of the digastric and stylo-hyoid muscles. After this is done the jaw and the larynx can be pulled forward on that side to a very considerable degree. The growth must be removed by scissors or the knife, and should be taken away in one piece. The best safeguard against septic trouble is the avoidance of fresh infection at the time of

the operation, free drainage of the cavity, and possibly removal of the internal jugular vein.

As a preparation for these operations the teeth should be repeatedly and thoroughly scrubbed, and the patient should use a mild antiseptic gargle. Iodoform packing is employed for twenty-four hours to stop oozing, but is withdrawn the day after operation, and the mouth is frequently washed with weak antiseptic solutions. The wound must be drained through the most dependent part of the skin incision. The patient is propped up as soon as possible. In severe cases the patient is fed through the stomach-tube, one being left in at the time of operation for three or four days.

The list of cases reported shows but four cured. This cannot represent the proper percentage of cures, since many of the patients were lost sight of. With great care and guided by experience, Cheyne holds that we can look forward to a lessened mortality and distinct improvement as regards recurrence. The most unfavorable cases are those in which the disease has spread to the base of the tongue, the mortality here being 33 per cent.

Cancer of the rectum is characterized by the moderate degree of malignancy and the tendency toward late recurrence and metastasis. Cheyne holds that in a large proportion of cases the hope of benefit from a radical operation is so very slight that we can without hesitation exclude them from the radical procedure, and at the same time help them much by colotomy; and thus the cases in which the choice of an operation has to be left to the patient are comparatively few. In most instances after attempts at radical operation there has been incontinence, in some fistula; in many, stricture has resulted or fecal extravasation has occurred. The mortality of the radical operation is high, averaging about 8 per cent. for the perineal, about 18 to 20 per cent. for the sacral operation. The mortality of colotomy is practically *nil.*

Reports on Therapeutic Progress

THE STATISTICS OF ANESTHESIA.

The first Congress of the Scandinavian Society of Surgeons, held in Gothenburg in 1893, prescribed as one of its objects the collection of statistics of anesthesia by its members. Their researches have furnished the following results.

There are reported from March 1, 1894, to March 1, 1895, from Sweden, Norway, Denmark, and Finland, 15,052 anesthesias. Of these, 11,284 were with chloroform, 1279 with ether, 2122 with mixtures of chloroform and ether, 362 with ethyl bromide, and five with chloroform and ethyl bromide.

The administration of chloroform has been by drops, by large doses, with preparatory injections of morphine, without morphine, after the administration of cocaine by the mouth, and with preparatory introduction of cocaine by the nares. The difference observed between the administration of chloroform by drops and by large quantity was insignificant.

Morbid symptoms were observed during and after narcosis as noted.

Vomiting during the anesthesia occurred as follows:

	Per cent.
Ether, without injection of morphine	14
Ether, with injection of morphine	25
Ether and chloroform without morphine	13.5
Ether and chloroform with morphine	18.1
Chloroform by drops without morphine	10.5
Chloroform in large doses with morphine	14.8
Chloroform, with cocaine in the nares	13.6
Bromo ethyl	10.77

Asphyxia during narcosis was as follows:

	Per cent.
Chloroform, with cocaine by nares	3
Chloroform in large doses with morphine	1.7
Chloroform in large doses without morphine	1.3
Chloroform by drops without morphine	1.03
Chloroform and ether with morphine	18.1
Chloroform and ether without morphine	0.96
Ether without morphine	0.79

Syncope has been observed as follows:

	Per cent.
Ether without morphine	0.08
Ether and chloroform without morphine	0.58
Chloroform by drops without morphine	0.4
Chloroform in large doses without morphine	0.2

Asphyxia has been observed in 139 cases, syncope in fifty-two cases. There were five deaths during chloroform narcosis—one in 2257 cases.

Vomiting after narcosis was observed in the following proportions:

	Per cent.
Ether with morphine	25
Ether without morphine	24
Ether with morphine and atropine	8
Ether and chloroform without morphine	26.6
Ether and chloroform by drops, without morphine	20
Chloroform by drops with morphine	6.15
Chloroform by drops with injection of cocaine in nares	42
Chloroform in large doses without morphine	57
Chloroform in large doses with morphine	40
Chloroform, with cocaine by mouth	2.6
Bromo ethyl	1.1

Jaundice followed chloroform narcosis in ten cases.

Somnolence was long continued in fifty-eight cases.

Albuminuria has been observed 128 times, but was not confined to either agent.

There were thirty-six cases of pulmonary affections after narcosis.

There were forty-three cases of feebleness of the heart and collapse after narcosis, as follows:

	Per cent.
Chloroform in large doses without morphine	.39
Chloroform by drops without morphine	.32
Chloroform and ether without morphine	.51
Ether without morphine	.15

Eighteen deaths following and to a certain extent attributable to the narcosis occurred as follows:

	Per cent.
Chloroform by drops with morphine, 2 cases	2
Chloroform by drops without morphine, 8 cases	.08
Chloroform in large doses without morphine, 2 cases	.18
Chloroform and ether without morphine, 4 cases	.25
Ether without morphine, 2 cases	.15

Hospital Physician Enydahl states that he has not had time to make a tabulated report. He is in favor of ether, and says that the reason why it sometimes does not work well is that the ether of the shops is not pure It must be absolutely pure. He uses Shiring's. He has administered ether (always without morphine) in at least 2000 cases, and has never had a death. He gives it always fasting, or after a cup of tea. Always drops it on a sponge in a napkin and brings it gradually and not smotheringly over the face. He has never had any serious complications of the respiratory organs. Sometimes, if the patient coughs badly, he changes to chloroform, after which the patient will take ether well, but he never prefaces ether with chloroform, as some patients will die at the very commencement of chloroform inhalation. He attributes his great success to the absolute purity of his ether.

He says that if, in using chloroform, the patient breathes very heavily, a change to ether will make the breathing lighter.—*Medical and Surgical Reporter*, April 18, 1896.

THE TREATMENT OF TYPHOID FEVER WITH TYPHOID THYMUS EXTRACT.

HENSHAW, of Cambridge, Mass., thus concludes a paper with this title in the *Boston Medical and Surgical Journal* of May 14, 1896:

Of these thirteen cases, the results in eight have been as satisfactory as could be expected; in four the course of the typhoid has not been materially shortened, and one death from hemorrhage occurred.

One case of typhoid fever was treated with injections of the plain sterilized thymus extract (without inoculation of typhoid bacilli, for control experiment). There was no appreciable change in the chart, or in the condition of the patient at any time. This shows that the presence of the typhoid organisms is essential to the success of this treatment.

In reporting such a small number of cases, comparatively, it would be quite absurd to draw any conclusions. The injections given have not been in any way injurious to the welfare of the patients, while, on the other hand, several of the cases have been materially benefited by this method of treatment.

If the writer's cases can be added to those previously reported, there would be a total of ninety-eight cases of typhoid fever treated with this extract. Where the treatment has been started reasonably early, there has not been a single death as yet recorded; he believes it is worthy of further trial, and after two or three hundred cases have been reported some positive conclusions can be reached. He suggests the use of a more concentrated and stronger extract, and, if possible, earlier and more persistent injections than could be given in the cases hitherto reported.

ARTIFICIAL FEEDING BY THE NOSE IN INFANTS.

In the *Journal des Praticiens* of May 2, 1896, SAINT-PHILIPPE of Bordeaux recommends this method in feeble or premature infants, or in those suffering from lesions of the mouth. He states that its technique is by no means difficult, the rubber tube being introduced through the nose and by this means a large quantity of liquid nourishment being passed into the stomach. The tube is passed into the back of the nose and down the throat rapidly in order to avoid irritation of the pharynx, which causes gagging or vomiting. He believes this method is useful, particularly where tracheotomy has been performed or where there is paralysis of the muscles of deglutition. The child is placed flat upon its back across the knees of the nurse, the head also being prone. Care should be taken, if the infant is very young, that too much liquid be not introduced into the stomach at one time, and also that the liquid be not too strong in nourishment. Carefully sterilized milk should be employed, or in the case of older children

broths should be used. The liquid should be carefully warmed before it is administered. This method has been long in use by physicians attached to establishments for the insane, and is of very great value in the treatment of this class of patients.

PRURITUS OF THE GENITALS.

HUNTER ROBB tells us, in a little brochure just received, that in treating a case of pruritus the main thing is to discover the cause. But even when this has been found, we are sometimes powerless to relieve the condition. Suppose that we find an endometritis with purulent leucorrhea, this should be at once attended to, since with its removal the pruritus may also disappear. If we have to deal with a neoplasm, with an acne, or more especially with cicatrices in the vulva, some cutting operation is more likely to bring relief than any other procedure.

Unfortunately, the patient hardly ever comes to us at the very beginning, and it is often impossible to be certain how much of the excoriation is due to the underlying cause, and how much to a dermatitis caused by the frantic efforts of the patient who has sought some, although only temporary, relief by scratching.

The removal of acne pustules covering the mucous membrane of the vestibule was followed, in several cases reported by Küstner, by the disappearance of the most obstinate pruritus.

Frederick and Wilshire hold that the disease generally has a parasitic origin, and would treat it with the various parasiticides.

When a woman comes to us complaining of pruritus, it may at first be allowable to give some one of the many washes so highly recommended for this condition, but as a rule the affection will not be cured in this way, and if the symptoms are not at once alleviated an examination should always be insisted upon.

We shall examine then (1) the external genitals for skin eruptions; in doing this, it will be well to obtain scrapings and examine them with the microscope for parasites. (2) We next examine the cervix for signs of leucorrhea and inform ourselves of the general condition of the uterus and appendages. (3) An examination should be made per rectum. And (4) the chemical and microscopical examination of the urine should never be omitted.

The presence of enlarged sebaceous glands or any signs of malignant disease should be carefully looked for. The urine, as we have said, should be examined—more particularly for albumin and sugar, and also microscopically. Hemorrhoids or fissures of the anus should be treated, and the vulva should be kept free from all irritating discharges. The general health of the patient should never be forgotten.

When the vulva is dry, too frequent bathing should be avoided and the surface should be kept moist, being treated not with evaporating lotions, but with ointments. Suppositories containing codeine or opium and hyoscyamus at night will often give the patient relief, since all the symptoms are aggravated when she gets warm in bed.

The name of the various external applications for pruritus is legion. You will find (and this is not an original remark) that whenever you have a long list of infallible remedies for any one morbid condition, some of them, or perhaps all of them, will disappoint you nine times out of ten, if not ninety-nine times out of a hundred.

Zweifel used to say in his lectures that nothing was any good except a two-per-cent. solution of nitrate of silver. This has sometimes disappointed the author. Ointments containing from two to ten per cent. of salicylic acid are sometimes effective. An application of a mixture of a drachm of chloroform to an ounce of olive oil will occasionally do some good, and sometimes none at all. A two-per-cent. solution of carbolic acid, the ordinary lead-and-opium lotion, or a solution of the acetate of morphine (two grains to the ounce), often gives relief for a time. But when the exciting cause cannot be removed, the treatment is of necessity empirical and too often unsatisfactory.

The most popular internal remedies are bromide of potassium, especially at night, and some form of belladonna, both of these drugs tending to decrease irritation of the peripheral nerves.

Some time ago Küstner and Schroeder began to try excision of the affected area, and in obstinate cases this has in their hands often proved successful.

Robb does not think that when we have tried everything else we should shrink from a cutting operation, because the bad effects of the disease upon the patient and the agony which she goes through justify the employment of heroic measures.

In his book, published in 1893, Küstner

gives only three instances of operative treatment, all of which, however, were ultimately successful. In the first case the patient had an endometritis, which was cured, without, however, any alleviation of the pruritus. Küstner then removed a portion of the mucous membrane, which was crowded with small retention cysts, and for three years afterwards at any rate the patient was free from pruritus, although she still suffered to a certain extent from endometritis. Another similar operation which he quotes was quite successful. In a third case in which the patient complained of pruritus, the vaginal portion of the cervix was found much enlarged. Küstner amputated it and found that the enlargement was due to retention cysts, there being no signs of carcinoma. After the operation, the pruritus continued to be as severe as before. A further examination brought to light an old defect of the perineum due to a previous labor. A perineorrhaphy was undertaken, the whitish part of the mucous membrane which had been the seat of irritation was removed, and the patient was cured.

ADHERENT PLACENTA.

In the *Intercolonial Medical Journal of Australasia*, March 20, 1896, NYULASY expresses the opinion that the only effective treatment of firmly adherent placenta is thorough curettement of the uterus. He contrasts this treatment with the recommendations of Barnes and Playfair. The former gives a true picture of the extreme difficulty and painful anxiety attendant on manual extraction, followed by the injection of iron in case of hemorrhage, and of antiseptics in case of septicemia. The latter says: "Such cases ('when it is found to be impossible to detach and remove the whole or greater part of the placenta') must be treated by antiseptic intra-uterine injections, so as to lessen the risk of septic absorption as much as possible; but until the retained masses have been expelled, and the discharge has ceased, the patient must be considered to be in considerable danger." To show what likelihood of success this mode of treatment offers, he instances the case of the Duchess d'Orleans (in the time of Louis XIII.), who had an easy labor, but died of septicemia—"on the right side of the womb was found, post-mortem, a small portion of afterbirth, so firmly adherent that it could hardly be torn off with the finger nails." To attempt to treat these cases, where the uterus and placenta seem to be continuous parts of one organization, in any other way than the writer has indicated, is, in the light of present knowledge, mere tinkering, and subjects the woman to dreadful risks, the worst of which is the sudden development of that fulminating type of sepsis in which the patient rapidly passes from health to death. No matter how often the douche is used, it can only influence the germs that happen to be on the surface.

In regard to sapremia, Professor Parvin says the local treatment of applying antiseptics "promptly ends the disease;" in sapremia due to adherent placenta, however, Nyulasy finds such treatment utterly futile.

"It can readily be understood," Professor Playfair has recently observed, "that such a procedure (curetting) is more thorough and complete than intra-uterine injection, and there can be no objection to it in hands tolerably expert in obstetric manipulations. It must, however, be only practiced in exceptional cases and with great caution, since any roughness might seriously injure the uterine structures."

Professor Lusk, at a recent meeting of the British Medical Association, said that he was not in favor of curetting. Personally, however, he employs it in every case of adherent placenta, believing it to be the only safe and scientific principle of treatment, and he considers it successful in proportion to the promptitude and thoroughness of its application.

As examples of the value of this treatment, the author appends charts of two groups of recent cases—the first illustrating the success of early treatment, the second illustrative of other important points.

In the first group, the case A was a 4½-months abortion, with the placenta firmly adherent: the bulk of this was removed in two pieces, the remainder by thorough curetting; the patient bled a good deal during removal, but recovered in the usual time. Case B had a temperature of 103.2° on admission to hospital, and was delivered of a decomposing seven-months fetus, with very adherent placenta, which the resident surgeon was unable to completely remove; he curetted on the second day (temperature 102°); recovery about the usual time. Case C: Full-time child, but still-born; placenta and membranes reported "doubtful" on expulsion; curetted the third day on the first rise of temperature (103°); recovery in the usual time. Case D: Full-time; placenta and membranes reported

"complete;" sudden rigor and rise of temperature to 104.8° on the eighth day; small quantity of adherent placenta and membranes removed by curette; rapid recovery. The adhering parts were similar in each case—fibrinous, as described.

In the second group the placentæ were expelled by expression, and in Cases A and C were reported "complete," but in B "doubtful;" these cases were therefore not immediately curetted. They each developed purulent endometritis, but there was no fetor, and little or no tenderness in any case. They all recovered—one practically in a fortnight, the other two in three weeks. Case C was curetted on the fifth day, but on the ninth day developed purulent endometritis (with thick odorless pus welling out of uterus, and temperature 104°); the necrosing endometrium was at once removed by the curette, and the temperature fell a degree daily until it reached normal. A was curetted on the sixth, again on the eighth, and finally (for purulent endometritis, temperature 105° and rigor) on the seventeenth day. Case B was curetted on the eighth day, after a rigor and rise to 105°; again on the tenth, and finally (for purulent endometritis) on the seventeenth day. Both these cases fell to normal almost immediately after the final curetting. In all three cases the earlier curettings removed fibrinous matters.

In conclusion, the author replies to Professor Lusk's recent statement that curetting may be followed by a rigor and rise of temperature, that the alternative treatment of intra-uterine douching is occasionally followed by exactly the same results; and, as Krönig observes, in the treatment of purulent endometritis "clinical experience has taught us that washing out of the uterus brings no benefit."

THE USE OF CHLORATE OF SODIUM IN CASES MANIFESTING INTOLERANCE TO IODIDE OF POTASSIUM.

In a letter from Greece to the *Journal des Praticiens* of May 2, 1896, Dr. CALOMENOPOULO writes that in a case of absolute intolerance to the iodide of potassium occurring in an old syphilitic in whom the administration of either large or small doses developed restlessness, engorgement of the submaxillary glands, abundant salivation, and other symptoms of the excessive action of the iodide, he administered, at the same time with the iodide, ninety grains of chlorate of sodium each day. Under these circumstances—that is, when the two medicaments were given—his patient was able to take forty-five grains of the iodide of potassium without exhibiting any of the symptoms above named. The treatment lasted forty days. As soon as the administration of the chlorate of sodium was stopped or the dose diminished, the symptoms of iodism returned at once. The patient had already vainly tried not only iodide of potassium, but also iodide of sodium. The use of chlorate of sodium for this purpose was suggested by the very good results which had followed its use in the treatment of mercurial stomatitis. The Doctor therefore recommends the chlorate of sodium highly in the conditions of which he writes.

THE VAGINAL DOUCHE BEFORE LABOR.

The *Boston Medical and Surgical Journal* of May 14, 1896, speaks editorially as follows on this subject:

The question of puerperal self-infection, of the possibility of a puerperal sepsis taking place as the result of the presence of pathogenic bacteria in the normal or diseased vagina, and not introduced from without, is of great practical importance, and has recently been the subject of careful study in European clinics. As a result, the common routine practice of giving an ante-partum antiseptic douche has been discontinued by certain men of large experience, after careful consideration of its advantages and disadvantages. The question of self-infection practically limits itself to the vaginal secretion, as micro-organisms present in the tubes and ovaries are beyond the reach of the antiseptic procedures of the accoucheur.

Is the average parturient woman, then, liable to infection by bacteria present in the vagina? and if so, what preventive measures are to be taken? As pointed out by Jewett in an interesting article in the *American Gynecological and Obstetrical Journal*, the conflicting opinions have, in the main, been divided into three:

1. That the vaginal secretion may infect, whether healthy or diseased.

2. That only pathological secretions can infect.

3. That the vaginal bacteria, either in health or disease, have practically no part in the etiology of childbed fever.

Ahlfeld is an example of those who believe that pathogenic organisms are always present in the vagina, and that every lying-in woman

is liable to infect herself. Others have found pathogenic bacteria only in pathological secretions.

Döderlein, in 1892, as a result of observations on nearly two hundred cases in a Leipsic clinic, found that pathogenic bacteria did not live in healthy vaginal mucus, but that in diseased conditions there was liability to infection.

König, in 1895, published the conclusion, as a result of experiment at a Leipsic clinic, that the streptococcus is killed by healthy mucus within two or three days after its introduction into the vagina: clinically, the genital canal may be considered clean if from forty-eight to seventy-two hours have elapsed since the last examination. He is supported by other observers in the view that the vaginal secretion is not an important agent in puerperal infection.

Jewett (*loc. cit.*) has collected statistics of 23,467 cases from large maternity clinics in this country and in Germany, where the ante-partum antiseptic douche is a routine practice, and finds the mortality from sepsis to be one-tenth of one per cent. In the small number of non-douched cases (2764) the mortality is one-and-a-half tenths of one per cent., a difference too small to prove anything for auto-infection.

These figures, however, do not support the opponents of the douche in any claim that it is harmful, the mortality being too small. The most that they can indicate is that it is unnecessary. The fact that without the douche an equally low mortality has been obtained conclusively shows that the chief factor in the prevention of sepsis is the avoidance of contact infection.

More conclusive, as Jewett remarks, are the results of observations in parallel series of cases at the same clinic, such as those of Zweifel and Leopold. Zweifel found, in a large number of births, that better results were attained without vaginal douches than with them, and he considers the natural secretion a better protection against infection than any antiseptic. Leopold's statistics show that of 4584 cases treated at the Dresden clinic from April 1886 to April 1889, with the ante-partum douches, 80.7 per cent. were free from fever. From April 1889 to April 1893, when the douche was omitted, out of 4088 cases 92 per cent. were free from fever. The douche was omitted again in 1893; and from that time till June 1894, 1200 cases were treated, the percentage of fever-free cases falling to 85.

If we accept these figures, which come from a reliable source and are carefully collated, we must, as Jewett says, reject the routine douche as an unreliable and even injurious practice.

In his own practice Jewett has for several years used no ante-partum douche except for cause. In healthy cases, even where instruments or the hand have to be introduced into the uterus, if rigid disinfection of hands, instruments and external genitals is carried out, the ante-partum douche is unnecessary. Gonorrhea in childbed, acute or subacute, is generally followed by puerperal infection, and in these cases antiseptic measures are to be adopted.

The presence of a yellowish, greenish or fetid discharge is, however, an indication of the presence of virulent bacteria, and indicates prophylactic disinfection, not merely the perfunctory antiseptic douche, but a thorough scrubbing with soap and hot water, followed by antiseptic irrigation, as carefully performed as in ordinary surgical and gynecological practice. An asepsis should be aimed at which is no less strict than is practiced in major surgical procedures. When time permits, vicious secretions are to be corrected by a mild but prolonged antiseptic douche once daily or oftener, for several days previous to labor.

Dr. Jewett submits the following conclusions:

There is no clinical proof that puerperal infection can occur from normal vaginal secretions.

All childbed infection in women previously healthy is by contact.

Prophylactic vaginal disinfection as a routine measure is unnecessary, and even in skilled hands is probably injurious. Its general adoption in private practice could scarcely fail to be mischievous.

In healthy puerperæ, delivered aseptically, post-partum douching is also contra-indicated.

These rules must hold good in the simpler cases of manual or instrumental interference in which the uterus is not invaded.

A purulent vaginal secretion exposes the woman to puerperal infection. In the presence of such discharges at the beginning of labor the vagina should be rendered as nearly sterile as possible. Concentrated antiseptic solutions should not be used, and the process should be conducted with the least possible mechanical injury to the mucous surfaces.

In case of highly infectious secretions, the

preliminary disinfection should be followed by douching at intervals of two or three hours during the labor.

Sterilized glycerin, or other suitable material, may be used to restore the proper lubrication of the birth canal.

The safest and most efficient means for correcting vicious secretions is a mild antiseptic douche repeated once or more daily for several days during the last weeks of pregnancy.

It is the duty of the obstetrician to know before labor the amount and character of the vaginal discharge.

Clinically, the amount of the discharge, its gross appearance, and that of the mucous and adjacent cutaneous surfaces, usually furnish a sufficient guide to the treatment.

Probable unclean contact within twenty-four to forty-eight hours is an indication for prophylactic disinfection.

THE TREATMENT OF BOILS AND ANTHRAX BY MEANS OF METHYLENE BLUE.

TRENITE has recently recommended in a Russian journal the use of $\beta\beta$ methyl violet in the treatment of these conditions. He injects into the boil ten to fifteen minims of a solution of methyl violet in the proportion of 2 to 1000, and asserts that a few hours after this has been done the pain disappears, and that a cure is usually complete in about two days. He believes this treatment is also of value in cases of anthrax in which surgical intervention is refused or is impossible. Should a true carbuncle or anthrax be present, this author recommends that the necrotic area be slit open by means of a bistoury or tenotome and all necrotic matter removed before the injection is made. After the injection has been given, the cavity is packed with iodoform gauze which has been soaked in a solution of hot chloride of sodium.—*Journal des Praticiens.*

THE TREATMENT OF CHRONIC SUPPURATION OF THE MIDDLE EAR.

In the issue of *Pediatrics* of May 15, 1896, CHEATLE, of King's College Hospital, London, contributes an interesting paper upon this subject, in which he first points out how dangerous it is for the physician to let the parents of the patient believe that the discharge from the ear will cease as the child grows older. To treat the disease with success, it is necessary to thoroughly examine the ear, nose, naso-pharynx, and the general health; if pain or tenderness is complained of, the greatest care should be exercised in manipulating the ear and introducing the speculum. Owing to the shortness of the external auditory canal in children, a speculum is not always necessary in obtaining a view of the membrane. If pulsation is seen in the walls of the canal, a more or less acute inflammation must be present; and if any discharge is seen, the physician should endeavor to determine whether it is purulent, seropurulent, or muco-purulent—for the second indicates a healing process, and the last an acute or subacute condition. If, on the other hand, the discharge be blood-stained or brownish in color, there will probably be a polyp or granulations present, or progressive caries of the bones of the ear. The ear should be cleansed by means of a fountain syringe, and gently mopped. Cheatle states that perforation of Shrapnell's membrane usually denotes a tedious case and one which is difficult to treat, as it means that the trouble exists in the attic, in which are situated the heads of the larger ossicles.

Perforation in the posterior superior quadrant should arouse suspicion of caries of the incus. The object in examining the nose is to discover hypertrophic and atrophic conditions, or deviations of the septum or other abnormal states connected with the accessory sinuses.

In using the syringe, direct that the patient lie down with the affected ear turned toward the window with a good light; pull the auricle upward and backward to straighten the orifice and the meatus, with the fingers and thumb of the left hand, the nozzle of the syringe being placed just inside the dark orifice, and the stream directed gently but firmly straight forward, the syringing being continued until the fluid returns clear. It is hardly necessary to add that the solution must be pleasantly warm and that after it has been applied the ear should be carefully dried. Usually, syringing morning and night is quite sufficient to keep the ear clean. If suppuration is profuse, an antiseptic solution of carbolic acid 1:60, or of boric acid 1:80, will often bring about a cure. If granulations crop up, instillations of alcohol with boric-acid powder are useful. Thus the following formula may be employed:

℞ Powdered boric acid, 1 drachm;
Rectified spirit of wine, 3 ounces.

Ten drops of this are to be mixed with ten of

hot water and the pleasantly warm solution poured into the ear from a spoon and allowed to remain for ten minutes or over after syringing has removed all discharge. Should the instillation produce a stinging sensation, it should be syringed out and again introduced, and if the second instillation produces pain it must be weakened.

Politzerization, which clears the Eustachian tube and middle ear of discharge as well as improves the hearing, should be resorted to from time to time. In children, however, this method is not necessary in many cases. The application of small pieces of wool or cotton tightly packed into the meatus is to be avoided, as it prevents the proper escape of the discharge. If the discharge is profuse, it is better to put a large piece of cotton on the outside of the ear. Should the child suffer from adenoid vegetation, enlarged tonsils, or hypertrophic conditions of the nasal mucous membrane, these must all be removed. Atrophic conditions should be treated by proper stimulants to the nasal mucous membrane.

Finally, Cheatle asserts that the greatest care should be exercised in a patient suffering from chronic middle-ear trouble to avoid the entrance of water into the affected ear during washing. For the prevention of this, a firm plug of cotton wool should be introduced in the external auditory canal. Because of the danger accompanying the entrance of liquid in this manner, patients with a middle-ear discharge should not bathe in the sea or in a swimming-bath under any circumstances.

THE TREATMENT OF JOINT-TUBERCULOSIS BY INJECTIONS OF IODOFORM.

In the *Denver Medical Times* for May, 1896, FREEMAN expresses his views on this subject, and tells us that during the last few years surgeons have inclined more and more towards the adoption of conservative measures in the treatment of tuberculosis of joints; operations with many are becoming the exception rather than the rule. Complete rest, with muscular relaxation, whether obtained by splints, by extension, or by confinement to bed, must always remain of the greatest value; but there have been recent additions to the surgeon's resources, the importance of which should not be underestimated. The most prominent among them is the injection of iodoform in suspension into the diseased tissues, with the result of inhibiting the growth of the tubercle bacilli. Just how this inhibition is accomplished is still under discussion. Outside the body, iodoform has little or no effect upon the bacilli, and even in the tissues when sinuses are present the action is but slight. Krause explains this by supposing that the bacilli grow more luxuriantly in contact with oxygen. Others insist that the action of the drug is due to the slow and continuous liberation of small quantities of iodine. It is claimed, however, that it is to its effect upon the tissues, not the germs, that iodoform owes its efficacy, Stubenrauch affirming that "it hastens the destruction of unstable pathological elements and augments the resisting power of those which more nearly approach a healthy state."

Iodoform is best employed in a ten-per-cent. suspension in olive oil. There is little objection to the use of glycerin, but ethereal solutions are too irritating. Absolute surgical cleanliness should be observed, for, as is well known, tubercular tissues are susceptible to infection with ordinary pyogenic micro-organisms. The iodoform should be soaked for twenty-four hours in a 1:1000 solution of bichloride of mercury, which is stirred occasionally with a glass rod to make sure that the solution touches every particle of the powder. It is then filtered, employing a filter paper through which has been poured a quantity of boiling water. The remains of the bichloride are then washed away with sterilized water. The iodoform is removed from the filter with a surgically clean knife, and rubbed up with the oil in a sterilized mortar, about four per cent. going into solution and six per cent. remaining in suspension. The oil is best rendered germ-free by keeping it at the boiling-point for about half an hour. If the mixture is kept in a dark place in a sterilized bottle stopped with germ-free cotton, it will not deteriorate for a long time.

The injections should be made both into the joint-cavity and into the surrounding infected tissues. It is best to but partially withdraw the needle and insert it in a new place rather than to make a number of punctures in the skin. A general anesthetic is seldom necessary, although the procedure is not devoid of pain. If tubercular pus is present, it should first be withdrawn.

An ordinary hypodermic syringe, with a fair-sized needle, may be employed; but it must be absolutely clean within, and should never have been used for any purpose that might cause contamination. Filling the

syringe with boiling water a number of times accomplishes sterilization more effectually than the use of antiseptics. The needle should always be boiled.

The site of the puncture should of course be prepared as for any other minor surgical operation, although the risk of infection from the skin in these injections is not great.

One syringeful of a ten-per-cent. suspension of iodoform is an average dose, although more can often be used with impunity. It is well to begin with a moderate quantity and watch carefully for symptoms of iodoform poisoning—which, however, seldom appear.

In general, the injections can be repeated every two or three days over a period of several weeks, and then continued at intervals of a week or two. No definite length of time can be given through which the treatment should be continued, although improvement often manifests itself after a few injections. Rapid improvement does not always occur, but one should not become discouraged too soon, perseverance sometimes bringing ultimate success.

There is some difference of opinion as to whether immobilization of a joint is desirable or not during its treatment, some surgeons even claiming that motion is of considerable assistance in obtaining a good result. The writer's experience has been that a moderate amount of passive motion is of value in certain cases, as it tends to prevent undue stiffness of tendons and joints. Motion should not be employed, however, if pain, swelling or increase of symptoms results.

In many tubercular joints a return to normal cannot be expected under any method of treatment, as enlargements and displacements of bones, fibrous thickenings, and contractions of soft parts, and more or less atrophy of muscles, may permanently persist.

Experience has taught that where sequestra or sinuses exist, the result of treatment with iodoform is not apt to be good, most cases being better fitted for operative interference. The "X rays" may be of service in determining the presence of such sequestra, which in the finished picture should appear darker than the surrounding rarefied bone. Operations are in place when the disease is rapidly advancing and threatening the life of the individual. Very advanced cases are often better fitted for amputation than for more conservative methods of treatment. There is always ample room for the judgment of the surgeon in individual cases, and no hard-and-fast rule can be laid down; but the fact remains that in most instances of joint tuberculosis, where the circumstances of the patient will permit, injections of iodoform should be given a fair trial before operative procedures are resorted to. In a large number of cases, variously estimated at from thirty to fifty per cent. and even higher, good results will be obtained. It is well to bear in mind that a tubercular joint cured by iodoform is apt to be of greater service to the patient, and present a better appearance, than a joint which has been extensively operated upon.

POWDER FOR HAY FEVER.

℞ Boric acid,
Salicylate of sodium, of each, 30 grains;
Hydrochlorate of cocaine, 3 grains.
Mix, and use by insufflation.

—*Journal des Praticiens*, May 2, 1896.

QUININE, SALICYLIC ACID, ANTIPYRIN, ACETANILID, PHENACETIN, THALLIN, AND ALCOHOL, AS ANTIPYRETICS.

In the fourteenth Congress of Internal Medicine, held at Wiesbaden in April, Dr. G. Binz, of Bonn, considered the value of these various antipyretics. An abstract of his remarks is to be found in the *Wiener Klinische Rundschau* of April 26, 1896. Up to the year 1867, he said, everybody had supposed that quinine displayed its action through the medium of the nervous system. At that time the speaker had shown its property as a powerful poison to low protoplasms, especially to those which proceeded from the putrefaction of plants; he had further shown that an antipyretic action in general did not depend upon the nervous centres or upon the circulation, and had maintained that a low organism must be the cause of malarial fever, and that its rapid cure by means of quinine was due to a paralyzing action of the drug on the parasite. Laveran's discovery and the labors of his followers had demonstrated the correctness of this contention. The reduction of febrile heat in other diseases, and the lowering of the temperature of healthy warm-blooded animals, were brought about by a direct checking of the activity of cells concerned in metabolism. It appears from subsequent experimental data, says Binz, that the effects of quinine are: 1. Reduction in the number and diminution of the vitality of the leucocytes. 2. Reduction of the nitrogen

and sulphur in the urine in healthy and in feverish warm-blooded animals. 3. Lowering of the internal heat of the body in the hot vapor bath. 4. Reduction of heat-production in healthy and in feverish warm-blooded animals, as shown by Rubner's calorimeter. Quinine is an antipyretic by virtue of its action on cells—as well on the morbific cells of malarial fever as on the normal cells of the organism. Accordingly, its febrifuge action has both a special and a general character. Further observation will be required to show whether or not it has a direct paralyzing action on other internal diseases.

The properties of salicylic acid are similar to those of quinine. It is a powerful agent against putrefaction and against fermentation, non-poisonous, and not decomposed in the human organism. Its field of action is to cope with the still unknown irritant of acute rheumatism. The weak bond of its chemical union with sodium is no obstacle to it; it is set free by the carbonic acid of inflamed tissues. In some of its effects salicylic acid is very different from quinine: it raises the internal heat in the hot vapor bath, it increases the amount of nitrogen in the urine, and it brings about an increase in the number of leucocytes in the blood. While it agrees with quinine in antagonism to a certain febrile excitant, it differs from it in its action on the cells of the organism, in which it rather resembles the other drugs mentioned.

Antipyrin, unlike quinine and salicylic acid, is but a weak antiseptic and antizymotic. Taken at the beginning of a catarrhal fever, it spreads a perceptible glow over the whole body. Zuntz and his pupils have taught that injury of the corpus striatum may give rise to true fever. This fever does not yield at all to quinine and only slightly to salicylic acid, but very decidedly to antipyrin. Moreover, antipyrin raises the internal temperature in the hot vapor bath. It does not alter the amount of urea in the urine, but increases that of the uric acid. As has been shown in the calorimeter, it heightens the radiation of heat from the skin and at the same time promotes the production of heat internally. It follows from all this that its antipyretic action is by way of the central nervous system—that is to say, of the regulating organs in the brain. It is only a symptomatic antipyretic, but one of rapid action in most fevers. Sedation of a central nervous irritation produced by the cause of the fever is the essence of its antipyretic action.

Acetanilid, phenacetin and thallin apparently act in the same way, or at least in a similar manner. In the case of thallin, however, there is in addition a certain direct germ-paralyzing action in infective fevers.

Up to the year 1869, alcohol was almost universally believed to be heating in fevers, but the speaker and his pupils showed that this belief was erroneous. Whenever alcohol exerts any appreciable effect on the temperature, it is to lower it. In the puerperal form of septic fever it has been demonstrated that large doses of alcohol reduce the fever rapidly. Its mode of action may be manifold. The speaker showed in 1870, however, that it must act through the nervous system and the circulation. Stimulation of the heart may play the part of heightening the circulation in the skin, and thus increasing the radiation of heat. It may be, also, that large doses of alcohol exert an antiseptic action in the system, and so reduce vitality of the bacteria. That such a purely chemical action is possible, aside from other factors, has been made evident to Binz by the failure of a post-mortem rise of temperature in animals that he had treated with large doses of alcohol for high fever. Finally, alcohol augments the urinary excretion and may thus lead to the speedy elimination of the toxins that produce fever and keep it up. Apparently all these factors work in concert, but further experimental investigation is to be desired.—*New York Medical Journal*, May 16, 1896.

A PRESCRIPTION FOR WHOOPING-COUGH.

℞ Powdered belladonna,
Oxide of zinc, of each, 15 grains;
Extract of wild thyme, 30 grains.

Make into forty pills, and give from one to six pills a day.

—*Journal des Praticiens*, May 2, 1896.

ALCOHOL IN THE TREATMENT OF ACNE ROSACEA.

ABRAHAMS contributes a paper with this title to the *American Medico-Surgical Bulletin* of May 16, 1896. He recommends a measure to cure acne rosacea, a disease of the skin which is at once old, common, and abominable, disfiguring the young as well as the old, and in the minds of the laity serving as an index to the moral obliquity of the afflicted victim. The method employed is attended with but a slight amount of pain, and leaves no marked after-effects; it enjoys the advantage of being free from the employ-

ment of ointments, pastes, lotions, and scarifications, all of which tend to inconvenience the patient and make him rather forego the desired treatment. Before proceeding to describe the new mode of treatment, the author refers briefly to the clinical picture acne rosacea presents.

More than acne vulgaris, acne rosacea shows a predilection for the face, the nose especially being its point of attack. Starting at a lower part of the organ, it spreads to adjacent parts, like the lower half of the face, the chin, the cheek bones, and the forehead. The whole face is very seldom involved. Sometimes, in the most aggravated form of rosacea, where a large area of the integument of the face is affected, scattered small areas of skin appear perfectly normal. The classical comparison of lupus erythematosus of the face to the wings of a butterfly is very often admirably seen in acne rosacea, the difference being that in the latter the aërial creature perches on the lower portion of the nose and cheeks.

As a rule, writers divide the lesion into three grades, although the line of demarcation is never hard and fast. Very often one grade insensibly merges into the other. The first grade is that in which a hyperemia of the nose, or nose and adjacent structures, is the main lesion. Sometimes there is only a slight redness over the tip of the nose, readily disappearing on pressure. Then, again, the whole lower half of the nose may be congested. This congestion is either very red, pale red, or bluish red.—The second grade not only includes the first one, but is characterized additionally by small or large dilated blood-vessels running in different directions over the nose and face. Small or large papules, pustules or tubercles are seen over the affected parts. There may be only one or two tortuous blood-vessels running along the nose, or there may be many over the nose and face. In this form of acne rosacea there is in some cases quite considerable hypertrophy of the cartilages of the nose.—The third form is that in which lobules and tubercles grow out of the end of the organ, and very often attain great size. The nose is enlarged in size, and presents a striking resemblance to a big-sized potato with many tuberosities on it.

As the treatment here recommended was only employed in the first two grades, the therapeutics of the third form are left out of consideration.

While it is recognized that the disease is caused in the great majority of cases by gastro-intestinal derangement, yet efforts directed toward the removal of the cause will not remove the lesion, although they may check its progress. In this, as in a great many other skin diseases, the physician can never rely on internal treatment only; he must always be equipped with an abundant stock of local remedies—abundant because no one skin disease will in all cases respond to the same therapeutic applications. Acne rosacea is eminently no exception. Sulphur, resorcin, iodine, and mercury, in different strengths and combinations, are employed. Scarification of the blood-vessels, and electrolysis, are adopted with the dilated vessels. Yet with all these remedies at hand, great perseverance on the part of physician and patient is necessary for relief or cure. Very frequently a complete cure is never effected, in spite of the best efforts. Electrolysis and scarification very often leave scars which, to some sensitive patients, are just as annoying as the original blemish.

The treatment the writer offers, and which has been very successful in his hands, is, as stated above, free from all objectionable features. He employs 95-per-cent. alcohol for local subcutaneous injections. The immediate effect of the injection is a swelling and anemia of the area subjected to it; this condition lasts but a few moments. The next occurrence is an increased redness, which lasts from half an hour to three or four hours. The dilated blood-vessels and papules will be found, after repeated injections, to undergo slow but sure obliteration, until finally the whole lesion disappears and the affected integument appears normal. The treatment, in some cases, lasts eight or ten weeks; in others, a great deal longer.

The technique is very simple. Take a clean hypodermic syringe, with a clean, thin needle. Fill the syringe with twenty or thirty drops of alcohol (95-per-cent.). Then select the part of the nose or cheek which you intend to treat; pinch it up and make your injection. If possible—and it is easily accomplished on the nose—compress with your fingers the part injected so as to retain the alcohol longer in the place. The author never uses more than thirty drops of the fluid, and has never made more than three injections a week. With asepsis, there will be no inflammation, and in the absence of it the remedy can be applied to the same place repeatedly until the desired result—a cure—is attained.

It appeared to the writer that the first form of rosacea, wherein hyperemia of the skin was the main or only lesion, was most amenable to this treatment. The second grade required greater perseverance on account of the papules and pustules present. However, both forms stood it well, as both in his experience were cured. This treatment is not offered as a specific.

He thinks that many a case of acne rosacea may not be cured by this, or by any other form of treatment; but, considering the uniform success in his cases, and the cleanliness and convenience that this new measure offers alike to physician and patient, it certainly seems to merit further trial and consideration. This treatment finds a justifiable parallel in the treatment of nævus vascularis with alcohol. As a matter of fact, the author adopted local alcohol injections in rosacea after he tried it successfully in a few small nævi of the head and face, the actual cautery having been stubbornly refused.

THE USE OF SULPHATE OF DUBOISINE IN PARALYSIS AGITANS.

The *Journal des Praticiens* states that the sulphate of duboisine has been employed by Mendell and Francotte with considerable success as a sedative in the treatment of paralysis agitans. From three to five granules, containing $\frac{1}{200}$ grain each of duboisine, may be given each day; or in other cases hypodermic injections of $\frac{1}{500}$ grain may be employed.

THE QUESTION OF DOSE IN THE TREATMENT OF CERTAIN FORMS OF NERVOUS DISORDER.

In the *British Medical Journal* of April 25, 1896, TYRRELL states that he wishes to bring before the profession, as briefly as possible, a practical point in the treatment of those nervous disorders which arise from exhaustion of the nervous system.

It will be found that these disorders, even when not hereditary, very commonly owe their existence to causes which have come very gradually and slowly into action, and that their chief and characteristic symptom is irritability; for there is a natural law that exhaustion of brain manifests itself sooner or later in irritability.

Now both these facts seem to the writer to indicate treatment by a slow restorative process and by the use of small nourishing doses of nerve tonic, in contradistinction to large stimulating ones. You can give back slowly that which has been lost during a long period of time.

It has always seemed to the writer that the present system of treatment of these irritable forms of nervous disorder by bromides has been founded on the failure to procure satisfactory results by tonics; and this simply because the doses used have been far too large. By the action of bromides we obtain an immediate result; the hypersensitive brain is numbed, as it were, into quiescence, but the relief lasts only as long as the effect of the medicine. If, on the other hand, instead of treating the symptoms, we are content to await a slower but more perfect recovery by gradually building up and restoring the lost vitality of the nervous system, perfect results may be obtained. If we re-nourish the brain, the irritability, which is but the symptom of exhaustion, must cease.

We may roughly divide the nervous disorders which arise from exhaustion, into two classes: 1. Those in which loss of control, and irritable action, are the main symptoms; these are more often found prior to mid-life, and include hysteria, epilepsy, chorea, among other disturbances. 2. A second class, which attends chiefly on the decline of life, and is marked more by depression and loss of functional power, would include all the forms of nervous depression which arise from failure of organic function, more especially of the digestive and eliminative apparatus.

Now, in both these forms of nervous failure, good results are to be obtained, provided we can nourish the brain without stimulating it. In order to effect this object, the doses used must be extremely small, and a full allowance of time must be given. There is evidence of the truth of this statement in the fact that the remedies found most useful in the treatment of the more irritable forms of these disorders, especially in children, are those unstimulating, nourishing drugs, such as cod-liver oil, the various preparations of phosphates, and small doses of arsenic or iron.

But it is with regard to the more direct form of nerve tonic that he wishes to speak. Take one drug, for example, which he has always found most useful in the treatment of all forms of nervous disorder arising from exhausted states of the nervous system—nux vomica. If we consult the Pharmacopœia we shall find the ordinary doses of this drug to be from a quarter- to a half-grain, or even

one grain. Now, if in either of the two forms of disorder mentioned we attempt to treat our patients with these doses, we shall find that, in a large majority of cases, we simply increase the intensity of the symptoms; but if we are content to use doses as low as $\frac{1}{100}$ or even $\frac{1}{200}$ grain, continuing the use for months instead of days, the result will be a complete though gradual recovery.

What is here said in regard to the one drug applies equally to all the more direct forms of nerve tonic—strychnine, quinine, arsenic. To obtain anything like a permanent curative effect the dose must be small and long continued.

One of the first favorable results to be noticed from the action of a nourishing dose is the general return of functional activity. The liver begins to secrete bile, the skin excretes acids with increased energy, and in consequence the blood, which has been loaded with effete matters, becomes purer and more nutritious, thus affording renewed vitality to the brain. In all cases it is wise to begin with a dose which is sure to be below the point of stimulation; it is easy to increase.

The space allotted does not permit of more than pointing out the general principle of treatment. That fair trial of this therapeutic point, revolutionary as it is, so far as dose is concerned, will prove as successful in the hands of others as in his own, Tyrrell is confident.

ECZEMA OF THE FLEXURES, AND ITS TREATMENT.

In writing upon this topic in the *American Medico-Surgical Bulletin* of May 16, 1896, CANTRELL tells us that treatment is more effective and requires less time at the bend of the elbow than in the popliteal space. The result of treatment will depend largely upon the active or passive character of the inflammation, and upon the amount of infiltration and thickening. In the acute inflammatory stage the remedies must be astringent and palliative. If the inflammation is extensive, and is found beyond the borders of the patch, local sedatives may be demanded, as, for instance, the ordinary solution of lead, a saturated solution of boric acid in water, the black wash of the American Pharmacopœia (three to ten grains of calomel to the ounce of lime-water). Preference may be given to the solution of chlorinated soda (Labarraque's solution). These remedies may be applied for an indefinite period without doing any harm, and if employed wisely the effect may be seen early. After they have been applied for from ten minutes to half an hour at each application, some soothing ointment should be used. The parts should not be dried with a towel, but simply mopped dry with some soft material, such as a Turkish bath towel. The ointment may be made of zinc oxide, vaselin, lanolin, ointment of rose-water, or, when a stiffer ointment is desirable, a little more wax or starch may be added. If these are not astringent enough, it may be advantageous to add to the ointment calomel, acetanilid, bismuth subcarbonate, or calamine, in the proportion of from twenty to forty grains to the ounce, or boric acid in the strength of from one to two drachms to the ounce of ointment-base. In the acute stage some paraffin paper and a roller bandage may be applied after the ointment, and at all times the parts must be well protected. In the chronic form the use of remedies must extend into the cauterizing grade, but they must not be too caustic. Here the best selection would be salicylic acid, sulphate of zinc, iodide of lead, in the proportion of from twenty to thirty grains to the half-ounce of ointment-base. If these are unsatisfactory, the strength may be increased each time until the proper proportion is reached. If one of these remedies does not prove serviceable, it may be necessary to use the stick of nitrate of silver; or caustic potash may be applied, and then one of the less stimulating ointments may also be used. When the rough portion of skin has been removed, the parts underneath will need treatment; otherwise the condition will return as severely as before. This part of the treatment will consist in the application of some ointment selected from the milder group, continued for an indefinite period. This variety of eczema requires the most thorough study on the part of the practitioner, who will be obliged to use remedies which in other instances he would be afraid to employ.

THE USE OF ICHTHYOL IN INTESTINAL DISORDERS.

La Médecine Moderne of May 13, 1896, tells us that GUINTZBURG has strongly recommended the use of ichthyol in intestinal disorders, particularly those which accompany affections of the genito-urinary tract in women. The dosage is four or five grains a day, preferably in keratin-coated pills, which are believed to pass through the stomach undissolved—thus disagreeable taste and

eructations are avoided. The medicine is best given some little time after meals. Good results were obtained in cases of diarrhea: appetite improved, the abdominal pains were much decreased, and the patient gained in weight; at the same time, if there was a tendency to menorrhagia, the menstrual function became more nearly normal. The best results were in cases of rebellious constipation. He failed to meet with any disagreeable symptoms such as are recorded by Bouchonieff, who found that in persons suffering from renal disease or from chlorosis the ichthyol was apt to produce loss of appetite, nausea, and vomiting. He attributes these disagreeable results to too large doses.

THE TREATMENT OF ACUTE DYSENTERY.

During the past year TESTEVIN has treated thirty-six cases of acute dysentery among the soldiers at Grenoble. His treatment had for its objects: first, to decrease the number of movements; second, to render the intestinal tract antiseptic; third, to remedy the local anatomical lesion; fourth, to combat the tendency to collapse.

To diminish peristalsis, he used hypodermic injections of morphine, $\frac{1}{12}$ grain every hour, a large mustard plaster being applied over the abdomen at the same time to aid in relieving pain. In other instances he found it of advantage, if there was a tendency to febrile involvement, to apply an ice-bag over the lower portion of the bowel. Intestinal antisepsis was attained by the administration of calomel in the dose of eight grains a day, for two or three days, in association with camphor and opium. As soon as the bilious action of the calomel was established so that the stools showed its effects, it was replaced by doses of bismuth varying from 60 to 120 grains in the twenty-four hours, and this was fortified in its effects by the use of five- to ten drop doses of laudanum. These doses of laudanum also facilitated the tolerance of full doses of salol, varying from fifteen to twenty grains in each twenty-four hours. For the local lesion he used injections of creosote made up as follows:

℞ Pure creosote, 15 minims;
Laudanum, 10 drops;
Milk or bouillon, 5 drachms.

To be added to six ounces of boiled water and given as one injection.

Preliminary to this, an injection containing fifteen grains of boric or salicylic acid is administered in order to wash out any fecal matter that may be in the rectum. The warm creosote injection is retained as long as possible. Three injections a day are usually sufficient, and after each one, if much irritability of the bowel exists, a very small suppository of belladonna and cocaine may be placed in the rectum. If the case is very severe, rectal injections of nitrate-of-silver solution may be used.

For the collapse, hot-air baths or immersion baths of hot water, sinapisms to the limbs, and hot bottles about the patient, are ordered. To sustain the heart, hypodermic injections of sparteine, caffeine, and if necessary of ether, are given. Finally, if the condition is extremely grave, he gives injections of normal saline solution into the subcutaneous tissues; these injections are absolutely aseptic and given in the quantity of half a pint to a pint or more, two or three times in twenty-four hours.

By means of this treatment he has been able to cure patients who seemed to be in a desperate condition.—*La Médecine Moderne*, May 13, 1896.

IRITIS.

HENRY JULER states, in the *Medical Press and Circular* of May 13, 1896, that the first canon in the treatment of iritis, from whatever cause arising, is a negative one—to do no harm by the use of astringents. If there be any doubt about the diagnosis, the proper course is to let the astringent wait and to prescribe a mydriatic for a few days until the truth declares itself. Many eyes are irreparably injured by the neglect of this simple precaution.

The second step in treatment of any case of plastic iritis is to aim at the complete dilatation of the pupil. This is of paramount importance, and should be done immediately the condition is recognized. The object is to prevent the formation of plastic adhesions to the lens capsule, or to endeavor to break them down if recently formed, to keep the inflamed iris at rest by paralyzing the sphincter, and to diminish the amount of the plastic exudation by contracting the blood-vessels of the iris.

The best mydriatic is undoubtedly atropine sulphate. It should be used in the form of drops (one-per-cent. solution) instilled into the palpebral sac every three or four hours, or as an ointment of the same strength. If adhesions have already formed and are re-

cent, it is well to use the mydriatic every hour for six consecutive hours; this treatment is likely to break them down, leaving a few dots or a ring of pigmented lymph upon the capsule, which, however, may partially or entirely disappear. If the adhesions are of sufficient age to have become firmly organized, the atropine will not break them down, but it will still cause dilatation of the unattached portions of the pupil and so prevent further complications. This free use of atropine may give rise to local irritation in the form of irritable conjunctivitis, swelling, and erythema of the eyelids and surrounding region. In some cases this is very severe. When this complication arises, the atropine may be changed for sulphate of duboisine, 0.5 per cent., or a solution of scopolamine of similar strength. These drugs sometimes exert a less irritating effect.

Systemic poisoning may also occur from the use of atropine, and is recognized by heat and dryness in the mouth and throat, difficulty in swallowing, thirst, loss of appetite, faintness, and even diarrhea and delirium. An efficient way of preventing this is to let the patient press the puncta lacrymalia at the inner canthus with his finger for a few minutes after each instillation, so as to prevent the drug from passing down the nasal duct.

The next indication in the treatment is to relieve local pain and congestion. One of the best drugs for this purpose is cocaine hydrochlorate. It may be used in conjunction with the atropine just mentioned, in the strength of two-per-cent. solution. It not only assists the atropine in dilating the pupil, but is a powerful local sedative. Those who suffer from the agonizing pain of rheumatic and gouty iritis know too well the value of this precious addition to our pharmacopœia. It is of all things most important in iritis that the patient should be enabled to get sound sleep.

Hot fomentations come next as valuable adjuncts to these drugs. Large pads of cotton wool saturated with water as hot as can be borne are to be placed over the closed eyelids, covered with oiled silk, and then with several layers of warm dry Gamgee tissue lightly bandaged on so as to keep up the warmth of the fomentation.

If pain still persists, and redness shows no sign of abatement, we now resort to local blood-letting. Three or four leeches should be applied to the temple of the affected eye, close to the outer canthus; or an equal amount of blood withdrawn by means of the artificial Heurteloup leech, one of the most marvellous aids we possess in the relief of pain and the control of inflammation.

In persistent cases, where the pain continues, and particularly when the tension of the globe seems to be rather increased, the operation of paracentesis of the anterior chamber often brings immediate relief. The operation is very easily performed, and that without danger of wounding the iris or lens, by using the paracentesis needle. By thus relieving the tension of the eye, the globe seems to be enabled to better absorb the atropine and cocaine, and so dilatation of the pupil and cessation of pain and redness is often a marked result.

The relief of pain, in all cases, is very important, inasmuch as without it the patient is unable to sleep, at least for any length of time, and prolonged healthy sleep is most essential because it gives rest to the eye. If, therefore, the pain is not subdued by the aforesaid remedies, we must at once resort to sedatives, in the form of hypodermic injections of morphine, bromide of potassium and chloral hydrate by mouth, or some other and equally efficient remedy.

The third important point is the treatment of any constitutional dyscrasia that may be found associated with the iritis.

In the iritis described as occurring in the early stages of secondary syphilis, there is no remedy so efficient as mercury internally administered. This is the most common form of syphilitic iritis, and one in which the beneficial effects of this drug are most marked. The author usually begins the treatment by giving two grains and a half of blue pill night and morning. Any other form of administration, such as the hypodermic injection, the mercurial vapor bath, or inunction by the skin, may be equally efficient, or even better than this, but he has, from old Lock Hospital experience, become partial to the old blue pill. The drug must be continued day by day and week by week until the iritis and all the collateral signs of syphilis have disappeared. The only sign for its temporary cessation is that of commencing ptyalism. If the gums become spongy or sore, the mercury must be stopped for a time, and a mouth-wash of chlorate of potash used until the soreness has disappeared. Certain important points in the administration of mercury are: to keep the gums as healthy as possible, to avoid taking a chill, and not to take fruit or alcohol in any form. If the iritis is of an acute

character—indeed, in any form—it is well to keep the patient in bed, and to give him warm baths so as to promote the action of the skin.

In the second or gummatous form of iritis, which has been described as occurring in the later secondary stages of syphilis, the administration of mercury is still indicated. These cases are more rare and generally confined to one eye. The writer always gives iodide of potassium and decoction of sarsaparilla in addition to the mercury, and the symptoms rapidly subside.

In the inherited form of syphilitic iritis we seldom find the iris suffering alone; it is usually sharing the burden with the cornea, the ciliary body, or the choroid. The iritis is more of a chronic variety. Mercury is well received by the patient and very efficient in its action. The patient need not generally be kept in bed, but should be well nourished, encouraged to take exercise in the open air and to avoid alcoholic drinks of all kinds.

In the rheumatic and the gouty forms of iritis the constitutional conditions are still of paramount importance. The pain in these cases is usually very intense, and requires all the local aid just referred to, but the general condition of the system must not be neglected. The patient should, if possible, be kept in bed, and a brisk purge of calomel and rhubarb, followed by a saline aperient, administered. Then the salicylate of soda in doses of ten grains, administered every three or four hours, will be found to have a marvellous effect in reducing the severity of the attack. This may be continued for two or three days, according to the degree of abatement. The free action of the skin should be promoted by hot-air baths once at least in twenty-four hours. A capital hot-air bath can be obtained at the bedside by means of a lamp placed beneath a chair, and a thick flannel cloak fastened round the patient's neck. He can sit and simmer for half an hour with the greatest ease, and perspire copiously. Great care should be taken to prevent a chill, and it is better to sleep between the blankets so as to encourage perspiration after the bath. The writer feels that the importance of keeping patients warm and in bed, and the promotion of skin action by hot-air baths, is considerably overlooked in England; indeed, patients are often allowed to get up and go about as if they were only suffering from a toothache, and when only one eye happens to be affected the other is allowed to go unshaded, and the affected eye is irritated by the influx of light to the sound one. Both eyes should be shaded, both atropinized, and the disease should be treated as one of the greatest importance, and requiring the greatest promptness and activity on the part of the medical attendant.

In the chronic-rheumatism cases the author finds the iodide of potassium and bark a good successor to the salicylate.

In gouty cases he attaches more importance to the patient's dietary and mode of life than to any medicines that may be taken into the alimentary canal. Many of the cases which are now described as idiopathic are in reality due to a gouty condition of the blood, and should be placed on a diet which would not only reduce as far as possible the uric acid directly introduced, but also retard, as far as is compatible with healthy nutrition, the formation of uric acid within the body. The iritis of these cases is always liable to recur unless the habits of the patient are so altered as to improve his blood condition.

Healthy exercise in the open air; a very moderate use of meat; white meats in preference to red; abstinence from all foodstuffs which give rise to dyspepsia; avoidance of all alcoholic drinks while the eye is inflamed, and extreme moderation afterwards; regular habits, *i.e.*, meals at regular hours, no late suppers, daily evacuation of bowels, abstinence from food and drink between meals, and good rest at night—these are the hygienic necessities.

In conclusion, the author advises the physician to know his patient, his habits and his idiosyncrasies, for though hard-and-fast rules are often laid down in the treatment of iritis, if any one disease is more prone to peculiarities than all others in responding to the influences of drugs, iritis might well be said to be that disease. You must be guided by all you see and know of your patient and his environments.

THE TREATMENT OF INFECTIOUS ENDOCARDITIS.

In the *Revue Internationale de Médecine et de Chirurgie* of April 10, 1896, PLICQUE tells us that the ice-bag over the heart calms the patient and relieves the dyspnea and oppression. If the pain is very great, injections of morphine may be given. The question as to whether cold baths should be administered in infectious endocarditis is one which is much discussed. Personally, Plicquet believes they are useful. The diet of the patient should consist entirely of milk, and

he should receive small quantities of alcohol and quinine or salicylic acid. The alcohol should be given in the form of Bordeaux wine or champagne, and coffee may be used as a stimulant. He thinks alcohol is particularly hurtful in cases in which there is cardiac distress, and he believes that the inhalation of oxygen in considerable quantities, at least one hundred quarts a day, gives good results. Quinine is given in the dose of from eight to fifteen grains a day, the sulphate being chosen by preference. If salicylic acid is used, thirty grains a day are given to a robust adult and fifteen grains to one who is less strong.

The following prescription may be employed:

℞ Salicylic acid, 10 to 30 grains;
Cognac,
Syrup of orange flower, of each, 6 drachms;
Distilled water, 3 ounces.

Should this dose produce headache or vertigo, it must be decreased. Should the heart become feeble, it may be well to give small doses of the tincture of digitalis, or the following may be used:

Tincture of digitalis,
Tincture of valerian, of each, 1 drachm;
Tincture of the chloride of iron, 20 drops.

This is to be taken once, twice, or thrice a day, according to need.

CÆSAREAN SECTION: SUTURE OF THE UTERUS VERSUS TOTAL EXTIRPATION.

Coe (*Medical News*, May 30, 1896), in a valuable paper under the above title, reaches the following conclusions:

Induction of premature labor is, of course, always a possible alternative, but the statistics of repeated Cæsarean operations show that many of the ignorant women do not apply to the accoucheur again until they are too far advanced for its successful application. Craniotomy is too often the necessary result of such attempts at saving the premature child, whose tenure of life is slight at the best.

As to the simplicity of the technique in suture of the uterus, there can be no question. That it is unaccompanied by shock, is by no means true. In upward of a dozen operations the author has attended, there was marked shock in every one, the patient requiring vigorous stimulation; yet all were in good condition beforehand, and in several cases labor had not begun. There is no comparison between the shock in these cases and that in a prolonged hysterectomy for uterine fibroid. Certainly the time necessary to properly complete a Cæsarean section is often greater than in an ordinary hystero-myomectomy. It is granted that sepsis can be eliminated in the majority of cases, at least where there has been no previous manipulation by hands of doubtful cleanliness. But our American records show that many patients have succumbed to sepsis, even up to this year—not necessarily through any flaw in the technique, but because the operator left a uterus which was already infected. It is a fact that when the surgeon is compelled to operate upon patients who have been frequently examined, or subjected to prolonged attempts at delivery, this element of failure cannot be eliminated positively; hence the risk of adding to the unfavorable statistics.

The former statistics of the Cæsarean and Porro-Cæsarean operations prove nothing, since it is well known that the latter include the majority of the "late" or unfavorable cases. It would be more just to class them under the head of puerperal hysterectomy for septic infection, since the conditions are nearly the same. On the other hand the old Porro operation, with extra-peritoneal fixation of the stump, was a crude and imperfect procedure compared with modern total or partial abdominal extirpation.

To return to the alternative—total abdominal extirpation of the uterus and adnexa. The advantages which the radical operation presents are:

1. Rapidity of execution. Any one who has had occasion to perform the operation must have been impressed with the ease with which ligation of the broad ligaments and separation of the bladder can be accomplished as compared with the same steps in an ordinary abdominal hysterectomy. In one of the writer's cases of celiotomy for rupture of the parturient uterus (clamps being used) it required only five minutes; in another, in which ligatures were used, about ten. It is not necessary to elevate the patient in Trendelenburg's posture. Time is an important factor, especially in cases of women who have been many hours, or even days, in labor, and are in collapse before they are placed on the table. There is no more shock or loss of blood than after suture of the uterus.

2. By removing the entire uterus we are reasonably certain that no infected tissue has been left within the abdominal cavity. In

the writer's first Porro case, seven years ago, the patient did indeed recover, but her cervix had been infected before the operation and sloughed out entirely. Free drainage per vaginam may save even the most desperate case. No uterine sutures are left to give subsequent trouble, as in reported cases.

3. Neoplasms of the ovaries or uterus, or diseased appendages, are removed at the time, instead of being left to give future trouble. Removal of the adnexa after Cæsarean section has always been fraught with considerable risk, since the large soft stumps, with thin distended veins, are exposed to more or less traction during uterine contractions. Fibroids apparently not large enough to justify a Porro at the time, have been left behind to give subsequent trouble.

4. Convalescence is quite as rapid as when the uterus is sutured.

In advocating total extirpation of the uterus, under these circumstances, Coe states that he has no intention of stirring up the old controversy of supra-vaginal amputation of the cervix *versus* hysterectomy. The results recently reported by Dr. Davis—three operations by which the mothers and children were all saved—are sufficiently convincing to need no comment. Moreover, the similar operation for fibroid tumors in the hands of Kelly, Baer, and many others, furnishes statistics which admit of no unfavorable comment. He calls attention to the fact that Dr. Davis's operations were performed upon patients who could be regarded as positively aseptic, so that in dropping the stump of the cervix he was fairly certain that no infected tissue was left behind to vitiate his own careful technique.

In such a case as Coe's, and in others in which the surgeon is obliged to operate under less favorable conditions and upon patients who have been subjected to repeated examinations and manipulations, one might well hesitate about leaving the cervix and closing the cavity without drainage. Moreover, the condition of the patient may be such that time is an important element, and the author believes that at full term the removal of the entire uterus is a simpler and more rapid operation than supra-vaginal amputation with such careful suturing of the stump as is necessary in order to secure a successful result.

In his experience, the objection with regard to weakening of the vaginal roof by removing the cervix is largely theoretical in puerperal hysterectomy, as well as in total extirpation for any cause. He has been looking for a case of vaginal enterocele ever since he began to do the operation, but in an observation of at least one hundred cases in his own practice and that of his friends who perform total abdominal extirpation, he has been unable to find one. Some of his patients have been under observation for two or three years.

To recapitulate: Granting that the indications for Cæsarean section are becoming every year more clearly defined, and that the operation will probably be more rarely performed in the future, in every case in which we decide to resort to it we should ask whether we are justified in allowing the patient to incur the risk of a second operation. The way to avoid this risk is to ligate the tubes, to remove the adnexa, or to extirpate the uterus. As experience has shown, the first two procedures do not furnish positive immunity against a second impregnation. Under some circumstances the surgeon's duty is clear. The presence of extensive disease, or of neoplasms of the uterus and adnexa, brings the case under the ordinary rules of modern surgery. Absolute failure of the uterus to contract after evacuation of its contents (a rare but not impossible contingency), and undoubted, or even suspected, infection of the organ, were long ago recognized as indications for Porro's operation. To this may be added a dyscrasia (as tuberculosis) which renders a subsequent pregnancy highly undesirable. There remains the class in which dystocia is due to marked pelvic deformity.

The wishes of the patient should be considered when they really carry weight, but the author agrees with Dr. Davis that this rule cannot be universally applied. As he fairly states it: "In women of good constitution and happily married, few will be found who will not desire to retain their power of reproduction. On the other hand, in married women of feeble strength, in circumstances of poverty, the burden of childbearing may well be removed. In women illegitimately pregnant and belonging to the class of professional paupers who are likely to be, with their progeny, a constant burden on the State, the continuance of reproduction is certainly to be avoided. Most of the latter class have little conception of the responsibilities of maternity, and even if asked to make a choice are incapable of doing so intelligently."

THE TREATMENT OF VULVO-VAGINITIS IN CHILDREN.

SHEFFIELD (*American Medico-Surgical Bulletin*, May 30, 1896) contributes a careful paper on this subject, with remarks upon purulent ophthalmia, and a report of sixty-five cases.

He did not find any malformations or strictures of the vagina, psychoses, anemia, etc., following vaginitis, and this leads him to believe that these supposed sequelæ existed before the attack and were probably overlooked.

Judging from the writer's experience, he does not hesitate to pronounce the prognosis of infectious vulvo-vaginitis as good, in the absence of complications. The course, however, is protracted, say from four weeks to four months—at any rate much more obstinate than in married women, probably due to the fact that the intact hymen in children interferes with the outflow of the vaginal discharge, so much so that we are often able, with the finger in the rectum, to dislodge a large accumulation of pus from behind the hymen.

Those practitioners who were so fortunate as to effect cures of vaginitis in about twelve days have either had to deal with simple catarrhal vaginitis or else failed to see their young patients again after the relapses set in.

The prognosis of infectious vulvo-vaginitis in itself being good, our main object in the treatment of these cases should be directed to combat the series of complications, and this, with patience and proper measures, can very easily be accomplished. All cases of infectious vulvo-vaginitis, whether in private or hospital practice, have to be strictly isolated, and the common use of privies, baths, beds, towels, etc., forbidden. Through such precautions the further spread of the disease will soon be checked.

Purulent ophthalmia as a complication of infectious vulvo-vaginitis is most frequently contracted either from conveying the purulent discharge from the vagina to the eyes, by means of the fingers, or the child, in rolling down from the pillow, may get into her eyes some of the pus particles which are usually found adhering to the bed-clothes. To frustrate these means of infection, the writer devised a bandage, so constructed that the child could bring her forearms upward, as in taking her meals, but not downward below the fifth rib. Before going to bed the eyes were covered with a thin layer of absorbent cotton and a wide but short bandage. The night nurse was to observe that the bandages were not displaced. Since the adoption of this plan of prophylaxis no more cases of purulent ophthalmia have occurred. The writer's predecessor had, previous to this, given orders to wash the eyes of each child affected with vaginitis, two or three times daily with a saturated solution of boric acid, and, notwithstanding that his orders were carried out with the most scrupulous care, they proved of no value. Still more, two cases treated for chronic conjunctivitis with instillations of boric acid (three-per-cent.) every three hours and an application of silver nitrate (0.625-per-cent. in water) once a day, have, during this time, contracted purulent ophthalmia, proving conclusively that boric acid as well as weak solutions of silver nitrate are by no means reliable preventives of purulent ophthalmia. The writer believes that a strong solution of nitrate of silver, say ten grains to the ounce of water, is an excellent abortive, if used at the early stage of lacrymation. Two cases were aborted by such an application.

From the knowledge gained from the cases of vaginitis under the writer's care, he feels certain that in most instances peritonitis, as well as metritis, is the direct result of infection by the vaginal secretion being forced into the uterus, Fallopian tubes, etc., during douching. This can be avoided: first, by raising the douche-bag not higher than two feet above the level of the child's body; second, by inserting a small, soft rubber catheter into the vaginal canal no further than one inch. For the prevention of synovitis or rheumatism, the administration of a mild alkaline diuretic, like citrate of potash, is of service.

As to the actual treatment of infectious vulvo-vaginitis, the reader is referred to the several text-books upon the subject. It may also be added that in the administration of hot baths, which are very beneficial in the acute stage of the disease, care must be taken not to immerse the child's head in the water, no doubt contaminated by the purulent discharge. The writer found it of advantage to place the children in Sims's position when douching, as in this way the rugæ become well distended, and consequently the medicated water reaches all parts of the vagina better than in the dorsal position.

To avoid involvement of the cornea in purulent ophthalmia, extreme care must be taken not to apply the slightest pressure against the eyeball. By filling the eye with

vaselin well under the lids during the intervals of cleansing, the friction of the hypertrophied conjunctiva against the cornea is greatly lessened.

The author's conclusions in reference to infectious vulvo-vaginitis in children may be summarized as follows:

1. Infectious vulvo-vaginitis in children is of gonorrheal nature; the diplococcus present in the purulent discharge is invariably identical with that of Neisser, decolorizing by Gram's method.

2. The infection can be conveyed through common privies, baths, beds, clothing, etc.

3. The symptoms accompanying the disease are less severe than those described in most text-books.

4. Most of the complications are preventable.

5. The value of boric-acid or mild silver-nitrate solutions as prophylactics of purulent ophthalmia is very doubtful.

6. Silver nitrate in strong solution is a reliable abortive of purulent ophthalmia, if used in the very earliest stage.

7. The mere presence of gonorrheal discharge in a small girl, without injury to the genitalia, does not prove that rape has been attempted.

8. Physicians in charge of asylums, or similar institutions, should be on their guard not to admit girls with vaginal discharge, unless they can convince themselves that this is not of gonorrheal origin.

9. The subject in question deserves a more careful study by the gynecologist and pediatricist, as well as by the general practitioner and medical jurist; and by their united observation we should in the near future be enabled to dispel any and all doubt as to the real nature of infectious vulvo-vaginitis in children.

THE SURGICAL TREATMENT OF ROUND ULCER OF THE STOMACH.

WEIR and FOOTE (*Medical News*, April 25, 1896), after reporting one successful case and one fatal case of gastric ulcer, contribute an interesting statistical study on this subject. Five-sixths of the cases occur in women; in perforation of duodenal ulcers the figures are reversed, the majority occurring in males. The average age for the women is twenty-five years; the youngest was fourteen years old. The average age of the men is thirty-nine years; this age in duodenal perforations is essentially the same. As to the seat of perforation, in the great majority of cases it was in the anterior wall and usually near the cardiac orifice; in most cases the perforation could be reached and sutured. In only eight cases was suture impossible either from the location of the ulcer or the condition of the stomach-wall. In sixteen cases there was no perforation found, twice because it was considered unwise to separate adhesions between stomach and liver to look for it—a fatal caution. In less than half the cases was gastric ulcer suspected before perforation occurred; a few gave no previous gastric history, but the largest number complained of symptoms variously interpreted as gastritis and indigestion. Vomiting is only likely to be absent in large perforations. It seems an invariable rule that perforation is attended by an attack of sharp abdominal pain. The average time which elapsed between perforation and operation was thirty-six hours. The extremes were two hours and 336 hours. In twenty-one cases which recovered the average time was nineteen hours, while in two-thirds of these cases it was less than twelve hours. In the fifty-five unsuccessful cases the elapsed time averaged forty-three hours, and was over twenty-four hours in two-thirds of these.

It is therefore evident that when more certain diagnosis brings the patient sooner to the operating-table, the percentage of recoveries will be improved. The essential points in diagnosis are, nearly always: A history of gastric trouble, and an attack of sharp pain referred usually to the epigastric or left hypochondriac region, followed sometimes by pain in the lower abdomen. The pain is at first intense, often producing collapse, unconsciousness, or even death. Usually it quickly moderates. Vomiting may or may not be present; vomiting of blood is very unusual. After some hours, the time varying according to the amount of the gastric contents, the symptoms of peritonitis manifest themselves.

Physical examination of the patient is of great importance. In the earliest stage of the trouble the pallor, the anxious countenance, the feeble pulse, the thoracic respiration, and the rigid abdomen, all point to injury of the peritoneum. Just as in beginning appendicitis abdominal rigidity is sometimes more marked on the side where the lesion is situated, so in perforation of the stomach the abdominal muscles of the left side are apt to be more tense than those of the right. If the stomach were empty, or nearly so, when per-

foration occurred, palpation of the abdomen would only serve to locate the tenderness and show the rigidity of the muscles. If a large amount of fluid has escaped from the stomach, its presence may be demonstrated by the usual tests for peritoneal fluid. In certain cases the induration in the wall of the stomach about an ulcer makes a tumor which can be felt by abdominal palpation. This is worth remembering in this connection, although the tenseness of the abdominal muscles in perforation makes deep palpation difficult.

If gas has escaped from the stomach or has developed by fermentation of the escaped gastric contents, the hepatic and splenic dullness may be reduced in area, or wholly disappear. It is evident that this condition might also follow intestinal perforation; but when the abdomen is opened, the distinction between the two is plain, for the gas from the stomach is without odor, or slightly sour, while that from the intestines has a fecal odor.

Comte, whose article on gastric troubles will repay perusal, says that perforation of the stomach is most easily confounded with acute intestinal obstruction, but the fecal or fecaloid vomiting is usually present in the latter trouble.

Perforation may also be confounded with an attack of pain in a gastric ulcer which has not perforated. It is just such facts which make one skeptical concerning the cases of perforation (?) which are treated successfully by rest in bed and rectal feeding.

Barker, in the *Clinical Journal* of April 8, 1896, in a lecture upon this same subject, states that he has had recently four cases of gastric ulcer which perforated and required surgical interference. An analysis of 101 cases admitted into Guy's Hospital gives fifty-nine males and forty-two females. Nevertheless, Barker holds that it occurs more frequently in females than in males. All the cases Barker records were in serving maids, and he states that it is a remarkable fact that almost all cases on record have been from the servant-maid class, the perforation being in the anterior surface with indurated margins.

In three of the cases on which he operated, in addition to the middle cut the rectus was divided on the left transversely. Probably the best incision is that which opens the abdomen in the middle line from the ensiform cartilage to the navel, supplemented by a transverse cut, which gives ample room to attack the stomach.

A most important requisite for a successful operation is speed. The stomach must be emptied and the abdominal cavity swabbed out. The first thing to do is to make sure that the space between the liver and the diaphragm is clean. It is well to slip the hand into the abdomen between the liver and the diaphragm and wipe both surfaces of the space with a sponge repeatedly, afterwards working down to the spleen, which is very apt to have about its mesentery a collection of fluid; then down by the kidneys and into the pelvis, wiping the bladder and working up the right side around the kidney to the liver, the right subphrenic space being cleansed like the left. Particular attention must be given to the depression behind the gall-bladder. Having thus cleansed the abdomen, the perforation should be stitched. As a rule it is wise to drain, and besides the tube it is well to put in strips of iodoform gauze laid in various directions—one, for instance, would go from the middle opening in the abdominal wall up to and over the liver; another under the liver and over the stomach; another on one side; and a fourth on the opposite side—the ends of all projecting from the median wound. These strips may remain for a variable time. In a case which recovered, the author took them and the tube out on the fifth day. Most of the cases are better without elaborate flushing.

The first case operated on did well for seven days; the temperature then rose, and she died on the fifteenth day. There was a large abscess between the diaphragm and the liver on the left side, the remainder of the abdomen, except just under the wound, being perfectly normal. This case was operated on twenty-six hours after perforation. The next case, operated on seven and a half hours after the perforation, had not a bad symptom. The third patient, operated on twenty-eight hours after perforation, died within the first twenty-four hours. The last patient operated upon also died; he was seen thirty-six hours after perforation occurred.

OBSERVATIONS ON SPLENECTOMY.

BOND (*The Lancet*, May 2, 1896), in an interesting article on this subject, states that while our knowledge of the function of the spleen as far as regards its relation to the corpuscular elements of the blood is somewhat fragmentary, still evidence has accumulated latterly which points strongly to the very important share the spleen takes in the

breaking up of the red corpuscles. It is in order to emphasize this point that he publishes the following remarks:

It seems pretty clear from the experience of several observers—Gibson and others—that the effect of removal of the spleen in dogs is to produce at first a diminution in the number of red corpuscles and an increase, both relative and absolute, in the number of white corpuscles; this condition reaches its maximum in a few weeks, and then, owing probably to the fact that other organs concerned in blood metabolism, such as the marrow and lymph-glands, take on compensatory action, the normal proportion of red to white corpuscles is re-established in a few months. In the case of man, although numerous cases of splenectomy have been recorded, there are very few in which the blood condition both before and after operation has been accurately noted. In Credé's case the immediate effect of removal was an increase in leucocytes, but the blood reached its normal state later. In this case, however, the spleen was cystic, and it is very important to bear in mind that in experiments on animals it is a physiologically healthy organ which is removed. So, too, in those cases in man in which the spleen has been removed for cystic disease, the organ is not probably in that active physiological condition as regards blood metabolism that it is in in other cases of splenic hypertrophy and splenic lymphadenoma, consequently the effect on the blood of removal of the organ is likely to be very different in the two classes of cases. With these few preliminary observations Bond narrates the following two cases, completing his article by a few comments on the effect of removal of the spleen on the blood.

A married woman aged thirty-five years, having two children, the youngest six years, was strong and healthy until two years ago, when, without any apparent cause, her health began gradually to deteriorate and she first noticed a swelling in the left hypochondrium. During these two years she has gradually lost strength and flesh and become more anemic, and has suffered, too, from occasional attacks of vomiting, until during the last fortnight the vomiting has been excessive and the asthenia very great. There was a large mass in the left side, having all the characters of an enlarged spleen; it was very movable, so that the sharp notched anterior margin could be turned right over and made to lie in the left flank, and it was probable that this extreme mobility, by causing stretching of the gastro-splenic omentum, may have been the chief cause of the vomiting. The temperature was normal; the urine healthy, but somewhat deeply pigmented, with occasional deposit of urates. After a few twenty-grain doses of calcium chloride on the three previous days, the spleen was removed on March 27, 1895, four days later. A median incision was made and the enlarged organ delivered lower end first; owing to its extreme mobility and the absence of adhesions this was not difficult. The pedicle was wide and contained some inches of the tail of the pancreas, which easily came outside the abdomen. The splenic artery, enormously enlarged, was first ligated separately, then the rest of the splenic mesentery was secured in several portions and the organ removed. The abdominal wound showed a tendency to bleed unduly, and the blood appeared brighter and more arterial than usual; after swabbing with hot astringent solution it was sutured, and no further hemorrhage occurred. Recovery, from the surgical point of view—that is, as far as the wound was concerned—was uneventful. At the end of the first week, after a week's subnormal temperature, the patient complained of considerable pain in the region of the liver, and the temperature ran up to 101°; it came down, however, in a few days, but ran up again to 103° a fortnight later, and for three days continued of remittent type, with morning remissions, again becoming normal on the third day. These irregular rises of temperature, having no surgical cause, were noticed in two other cases of splenectomy, and indeed, in patients who are suffering from splenic enlargement with or without leucocythemia, the temperature line, even when normal or subnormal, shows the evening rise and morning remission; it may probably depend on the blood condition and requires further investigation.

The effect of the removal of the organ on the blood may next be considered. The blood was examined three days before operation; at that time the red corpuscles numbered only 3,000,000 per cubic millimeter, the white were in the proportion of about 1 to 250 red, and the hemoglobin was only fifty per cent. of the normal quantity. The patient was on a generous diet and small doses of arsenic and iron. Seven days after removal, the patient having been on the very low diet usual for the first few days after abdominal section, the red corpuscles numbered 6,000,000 per c. mm., the white were 1 to 250, and the hemoglobin had risen to

eighty per cent. The blood was now examined at intervals of about a week; the number of red corpuscles was not maintained, but fell on April 11 to 5,800,000, on April 21 to 5,200,300, but rose again on April 28 (which date coincided with the febrile attack) to 6,000,000, falling again, however, till on May 28 it was 4,120,000. The white corpuscles showed a very slight progressive increase, and the hemoglobin fell after the first week from eighty to seventy per cent., and remained at about sixty-five per cent. of the normal. The marked change in the patient's appearance after the first week, from pallor to a florid complexion, was very striking, and when last seen on June 8 the appearance was maintained; she expressed herself as feeling well, though still weak; the urine was now, and had been since the operation, pale. The spleen after removal and when drained of blood weighed one pound, was uniformly enlarged, of a dark-blue color, and on microscopical examination showed the appearance of simple hypertrophy—that is, enormous increase of the pulp tissue or reticular structure crowded with lymphocytes. Besides the changes in the corpuscular elements in the blood mentioned above, there were other changes.

A specimen of blood both before and after operation, when examined immediately after withdrawal, showed a considerable number of masses of granular protoplasm like islands in the plasma. On staining thin films of blood coagulated by heat immediately on withdrawal, with Grubler's eosin-hematoxylin-glycerin stain, these irregular protoplasmic masses stained deeply with hematoxylin, contrasting strongly with the eosin-colored red corpuscles. As to the nature of these bodies: knowing that other observers have described the appearance of granular bodies in the blood, which have been really a post-mortem change and due to aggregation of blood-platelets and other causes, it seemed likely that such might be their origin in this case. The fact that they were present in a film of blood heated on a cover-glass immediately on withdrawal shows that the change must occur very rapidly. In order, however, to decide this, the writer first examined the blood by pricking the finger through a drop of Hayem's fluid, and allowing the blood to run directly from the vessels into that fluid, as practiced by Hayem, but he found that these granular masses were still present as such in the liquid. However, when using osmic acid (two-per-cent.) instead of Hayem's fluid, they were not present, as such, in the blood as it left the vessels, but rather an increase of small disk-like granular bodies exactly resembling the figures of Hayem's blood-platelets, fixed, no doubt, by the osmic acid in the form in which they circulate in the vessels.

An examination of the blood of other patients suffering from other diseases was now undertaken, and while granular masses were occasionally found in many of the diseases accompanied with high temperature, especially of the infective type, in which there was increased activity of the blood and lymph organs, he found them especially abundant in a case of phthisis in the last stage with a very marked hectic temperature with an evening rise of 103.5°. Here, too, they were absent in the blood received into the osmic-acid solution, and instead was found a marked increase in the blood-plates as compared with normal blood. The same masses were found, with the same antecedent increase in blood-plates, in a case of splenic leucocythemia, but in a very much less marked degree, and in this case the very numerous leucocytes were of a large, faintly granular kind, with dividing nuclei, and the small, deeply granular lymphocytes, whereas in the case of splenectomy the few leucocytes were like those found in the normal blood. It is also interesting to note that the same granular masses were found to a very excessive extent in a patient in whom the spleen had been removed by Mr. Marriott four months previously. The organ is now in the Museum of the Royal College of Surgeons of England, and on microscopic examination showed the same character of hypertrophy together with numerous collections of large multinucleated cells like giant cells. In this case there was no leucocythemia and not much anemia, but there was a very marked tendency to hemorrhage; and, further, the writer found that these granular masses were practically absent from the blood of a patient when examined fifteen months after removal of the spleen for cystic disease, also by Mr. Marriott.

Such, then, are the facts as far as ascertained. Before drawing any inferences from these as to any function the spleen may have in blood metabolism, it may be well to call to mind for a moment the various views held as to the physiology of the normal spleen. It is supposed that the spleen in man takes some share in the retrogressive changes in the red corpuscles, in some way tending to dissociate the hemoglobin from the effete corpuscle, and thus prepare the way for the further

change—the conversion of hemoglobin into bilirubin which occurs in the liver (Foster). It is held that the spleen, as a part of the lymph-gland system, produces leucocytes, which are thus added to the blood. It is further held that the spleen produces red corpuscles either by the deposition of hemoglobin in the large cells of the spleen pulp, or, as held by Virchow, that it converts the leucocytes into the hemoglobin-holding or red corpuscles during their slow passage through the pulp tissue, and that the essential factor in the disease leucocythemia is a failure to bring about the conversion of white into red corpuscles. Among these various suppositions it seems clear that in the evidence derived from pathological investigation, as in that derived from experiments on animals, it is very difficult to isolate, as it were, the spleen from the rest of the organs, lymph-glands, bone-marrow, etc., concerned in blood metabolism, and to apportion the exact amount and kind of function to the spleen which it really possesses. The fact that, in the case of splenectomy, after removal of a hypertrophied organ the red corpuscles doubled in number in one week after operation, other things remaining the same, is pretty clear evidence that the spleen in this case was previously to removal actually engaged in the destruction of the red corpuscles.

The next point is the presence in the blood of the granular masses which are probably not present in the circulating blood, which have for their antecedents an increased number of blood-plates. The masses are so large that it is somewhat difficult to understand how they can be formed by the aggregation of numbers of blood-plates only, and it looks as if each aggregation of plates was a focus from which at the moment of withdrawal of the blood some effect was produced on the plasma around, causing it to become granular and to take the hematoxylin stain. The fact that these masses, with their antecedent increase in number of plates, gradually increase after splenectomy, and were also present in a marked degree in one patient four months after removal of the spleen, is clear proof that the blood-plates are not formed entirely or even chiefly in the spleen. The further fact that this increase of blood-plates is present together with a marked tendency to hemorrhage is a matter of peculiarity and of interest because it has been strongly held by Hayem, Osler and others that the blood-plates are one of the determining factors in causing coagulation of the blood.

Finally, it is becoming more evident that these different cases of splenic diseases, varying as they do in their clinical character, in the degree of anemia, and in the presence or absence of leucocythemia, have each a different pathology; and that in many cases the disease is a general one affecting the whole system of blood-forming organs, while in others the spleen itself is the organ alone involved; and it is, of course, in this latter class that the operation of splenectomy holds out the best prospect of success.

DR. GIBNEY'S METHOD OF TREATING SPRAINED ANKLE, WITH REPORT OF SEVEN CASES.

F. D. Reese, in the *Medical News* of April 18, 1896, states that while perusing the pages of the *New York Medical Journal* of February 16, 1895, he came across an article entitled: "Sprained Ankle—A Treatment that Requires No Loss of Time; Requires No Crutches, and is Not Attended with Any Impairment of Function." The article was written by Dr. Gibney, of New York. This method of treatment of sprained ankle, with rubber adhesive plaster, he has called Gibney's, although Dr. Gibney claims no priority, but says Dr. Cotterell of London used a similar process.

For a sprain about the external malleolus, take a roll of the best rubber adhesive plaster, about one inch wide. Begin at the outer border of foot, near the little toe, and carry it around the heel to a corresponding point on the inside of the foot. The next strip is applied vertically: beginning at the juncture of the lower and middle thirds of the leg, it passes down along the tendo Achillis, around the heel, and up the leg to a point opposite the place of beginning. The rest of the strips are applied in the same manner as these two, overlapping each other about one-third, until the ankle and instep are all covered, except one inch in the median line. This is left to guard against any possibility of cutting off the circulation.

Dr. Gibney says: "If the sprain involves the tarsal joint itself, or mid-tarsal joint, straps should be applied as follows: The first one begins on the inner side of the heel, passes back of the heel, below the external malleolus, over the dorsum of the foot, and terminates just below the ball of the great toe. The second one is started just under the external malleolus, passes back of the heel, over the front of the foot, and ter-

minates just under the outer side of the foot, near the small toe;" but this Reese hardly deems necessary if the straps are applied as described, bringing the ends of the plaster within one inch of each other.

It is apparent that these strips of plaster become a closely interwoven and tight-fitting splint, that restricts motion, sustains the injured ligaments and tendons, and prevents effusion. This treatment impressed the writer as being the ideal one, and he resolved to give it a practical test. The history of seven cases treated by this method are presented, after which the reader is left to decide whether the results justify the title of Dr. Gibney's article.

CASE I.—Charles R., aged twenty, sprained his right ankle as the result of a misstep while working in the woods in December, 1894. He had recovered from the more acute symptoms and pain when he came to the writer's office, March 13, 1895, but could not then step squarely on his foot, and was compelled to support himself with two canes. Examination of the ankle revealed a subacute inflammation and tenderness on pressure around the external malleolus and over the tarsal bones. Adduction and flexion of the foot caused more or less pain, and the patient said (which was evident) that he was unable to do his work. Reese applied the straps as described, and the patient was able to immediately abandon the canes and walked with but a slight hitch in his gait. He was directed to wear the straps until they came off, if they continued to afford relief. Some months later he said he had worn the straps for six weeks, and that, as far as he could see, he had made a perfect recovery.

CASE II.—Mrs. L., aged thirty-six, fell from her bicycle and sprained her left ankle, April 20, 1895. The writer saw her at her home the same afternoon. Around the external malleolus and over the tarsal bones the tissues were swollen, and there was extravasation of blood. Motion was limited and pain extreme. He applied the straps, and she was able to take a few steps around the room. Some weeks later she reported that she had suffered a good deal of pain for about a week, after which she gained rapidly and was well at the end of three weeks.

CASE III.—Mr. R., minister, aged fifty, slipped and sprained his left ankle June 26, 1895. His wife applied hot fomentations until the day following, when Reese was called to see him. He found him in bed convinced, as he expressed it, of the "physical impossibility" of walking. The tissues were slightly swollen around and under the external malleolus, with some ecchymosis. There was great tenderness upon pressure, and limited motion. Applied the straps, and patient was able to walk around the room with ease. The day following he walked to a near neighbor's. This was on Wednesday, and the following Sunday he walked twice to church and preached at both services. July 3, changed the straps. There was some tenderness, and tissues were black and blue. On July 16, discharged the patient.

CASE IV.—Mr. S., aged sixty-five, broom-maker, came to the writer's office on crutches, June 27, 1895, and gave the following history: Fell off the porch, eight weeks before, and sprained, as he supposed, his left ankle. On examination the writer found he had not only sprained the ankle, but fractured the fibula, low down. The straps were applied, which gave him a great deal of comfort as far as the ankle was concerned. Reapplied the straps July 13, when there was less swelling, and the callus at the break was more easily felt. He was able to walk with one cane; from this time his recovery was uninterrupted.

CASE V.—Mr. B., aged thirty-three, came to the author's office on crutches, June 28, 1895, suffering from sprain of left ankle, which occurred two days previously. The ankle was badly swollen around external malleolus, and instep ecchymotic. Manipulation caused pain, and the foot was restricted in its movement. Applied the straps, which gave immediate relief, and he was able to step on the foot. Reapplied straps July 2, and discharged the case, well, July 19.

CASE VI.—Mr. H., aged thirty-one, slipped and sprained his right ankle, August 19, 1895. He called at the Doctor's on the 20th, and was then suffering great pain during locomotion. The ankle was found swollen about the external malleolus, but there was no extravasation of blood. Applied the straps, and the patient experienced immediate relief. He lost no time, but worked at his trade, which was that of a moulder. August 27 he was discharged, but instructed to wear the straps a few days longer.

CASE VII.—Miss K., aged twenty-four, was brought to the office July 17, 1895. She had fallen and sprained the right ankle and tarsal joints; could not step on the foot, and suffered a great deal of pain from it. The movements of abduction, flexion and extension were restricted. The tissues were

slightly swollen over these joints. Applied the straps, but she was unable to stand (probably in part due to fear). She was greatly relieved of pain. July 22, five days after, she removed the dressing, at the suggestion of a friend, believing the parts should be bathed. July 23 she suffered so much pain that she sent for her physician, who reapplied the straps, which gave her instant relief. Her recovery was uninterrupted, and she returned to her work fourteen days after the first application of the straps.

A CRITICAL RÉSUMÉ OF RECENT PROGRESS IN CEREBRAL SURGERY.

The discussion on cerebral surgery at the recent meeting of the New York State Society does not offer much encouragement to the enthusiast in this branch of work. The conclusions reached must be of value, as they expressed the deliberate opinion of several prominent neurologists who have had a large experience in this class of cases. It cannot be truthfully charged that surgeons have ever been over-enthusiastic about operations on the brain. Ten years ago it was expected that the advances in cerebral localization would open up an avenue for successful surgical interference in many cases of cerebral disease. It must be acknowledged, however, that this expectation has not been realized. It is perhaps as well that the views of the neurologists referred to were somewhat discouraging, for it will tend to limit operative interference in questionable cases, and the inference must naturally be drawn that in the future, cases for cranial operation, especially when for the cure of epilepsy, will be more carefully selected than has been the custom during the past few years. The difficulties in the way of correct diagnosis ought to stimulate the diagnostician to a more careful observation, and a more accurate classification of the characteristic symptoms of every case, so that he may be able to reach a reasonably certain decision as to the possibility of relief by means of operation. At the present time it certainly appears as if but a small percentage of patients who suffer from cerebral disease can be relieved by surgical interference. The most favorable results have been obtained in abscesses due to ear disease, and in sinus thromboses. It is true that some brilliant cures have followed operations for tumors, or for the relief of Jacksonian epilepsy when due to traumatism, but such results are exceptional. Reports of cases, both of failure and of success, are slowly accumulating, and as the number increases the prognosis of such operations must at least become more accurate, if not more favorable. In a department of surgery where the cases can be counted by the score only—instead of by the thousand, as in some specialties—the history of even a single case must be of interest, and often of great value.

The uncertainty of diagnosis is only one reason why results are apt to be unsatisfactory. There are three more potent reasons: first, the character of the lesion; second, its inaccessibility; and third, the impossibility of its removal without the substitution in its place of other lesions of equal or greater severity. Many cerebral tumors are either malignant or tubercular. The difficulties attending the removal of cancer in other regions apply with still greater force to cerebral growths of this character. The same difficulties, though to a less degree, apply to operations on tubercular tumors. Since the appearance, in 1889, of Bergmann's monograph on tubercular tumors of the brain, operation upon these growths has not been regarded with much favor, by either neurologists or surgeons. His objections to surgical interference in this class of cases were: first, that following the operation there was apt to be extension of the tubercular process to the coverings of the brain, resulting in a fatal tubercular meningitis; and second, that removal of the growth was apt to be incomplete, and that recurrence was almost certain and generally rapid. Recent experiences have, however, somewhat modified this unfavorable view. A number of apparent cures have resulted. In a recent article by Krönlein, fifteen cases of operation are reported. Four of these patients were permanently cured, and two were temporarily improved. The mortality was great, seven having died as the result of the operation, though in four of these the tumor had not been found by the surgeon. It must be granted that there are cases of cerebral tuberculosis which should be subjected to operative interference. They are, however, exceptional, as either general tubercular infection or advanced disease of any other single organ must contra-indicate operation. The same is true of malignant growths. A few successful cases have been reported, but we cannot expect much progress to be made in this direction. Often, however, the nature of the tumor cannot be known, and if from the symptoms it can be judged that there is

a probability of its removal by operation, an exploratory opening in the skull is certainly justifiable. The danger of this procedure is slight, and a benign tumor may be exposed.

The inaccessibility of the growth will always prove a great barrier to the successful removal of brain tumors. Tumors at the base of the brain or buried deeply beneath the cortex will always defy the operator. The damage which necessarily must be done to the cerebral tissue in order to reach them, is the factor that nullifies the operation.

A very complete account of all operations for tumors of the brain has been made by Starr. Up to 1896, he has collected 162 cases. In 48, the tumor was not found by the operator. In 7 cases it was found, but could not be removed. In 107 cases the tumor was found and removed; 72 of these patients recovered, and 35 died. Considering the hopeless nature of such cases, this mortality is certainly not excessive.

The results of operation for the cure of epilepsy have been very disappointing. In comparatively few cases is resort to surgery justifiable. It is exceptional that autopsy on such cases reveals any gross lesion within the cranium. And a favorable result is to be expected in such cases only where there is a visible lesion, so situated that it can be easily reached and safely removed. The most favorable results are to be expected in cases where there is an irritative lesion pressing on the cortex of the brain. If there is a reasonable chance that such a lesion exists, operation is demanded. For example, when the convulsions follow a traumatism, the irritant being a depression of bone, a thickened dura, an organized blood clot, a cyst, or an abscess, the chances of cure are good, provided that years have not elapsed between the time of injury and the operation. In cases of Jacksonian epilepsy without a traumatic history, the outlook is less favorable. In many of these, the lesion is one that cannot be removed by operation.

The excision of that part of the cortex which governs the affected muscles but rarely gives permanent relief. In its place there forms a cicatrix which remains as a source of irritation; indeed, after many cerebral operations, this cicatricial tissue will prevent a permanent cure. The new tissue may not at first act as an irritant, and on this account many of the reports of "cure by operation" are valueless, inasmuch as sufficient time has not elapsed after the operation to fairly decide whether or not a cure has been effected. No definite conclusion can be drawn until a year at least has elapsed. It must not be overlooked, however, that in certain cases where radical operation is impossible it is justifiable to make an opening in the skull for the relief of intracranial pressure. Such a safety valve will often temporarily relieve the symptoms, and may even permanently mitigate the violence of future attacks.

The operative technique of cranial surgery varies somewhat, according to the training, mechanical skill, and experience of the surgeon. On one point all are agreed, *i. e.* the vital importance of strict asepsis or antisepsis. Various methods are employed for exposing the interior of the cranium. The older method, according to which one or more buttons of bone are removed by the trephine and the opening enlarged by the rongeur bone forceps, is still frequently employed. If a large opening is required it can be made with greater rapidity, according to Horsley's method, by means of the ordinary amputating saw and his massive bone forceps. The employment of either of these methods, however, prevents the replacement of the bone. If it is considered undesirable to leave a permanent gap in the skull—and this opinion is entertained by the majority of surgeons—the flap method must be employed. The curved incision in the bone can be made by either the chisel or a saw working by an electric motor, and, the base being broken, a window of the desired size is made, through which the necessary inspection and manipulations can be accomplished, after which the flap is replaced. If chisels are used, hard blows must not be struck by the mallet, as serious results have been attributed to its impact. Cases have been reported where considerable shock to the respiratory and circulatory centres has been produced, and where subdural hemorrhages have resulted. If the saw be employed, this concussion is avoided, and the section is more rapidly made, but in spite of every precaution the best saw will occasionally fail at the most critical moment, and there is also the disadvantage that it is difficult to perfectly control its movements, and hence injury to the dura and brain is apt to occur. Until recently, the saws employed have been very thin, so that it has been almost impossible to see the bottom of their groove and to ascertain what depth had been reached. The blades are now made thicker, and this improvement ought to lessen the risk to the brain and its

membranes. In spite, however, of many ingenious devices of this nature, the use of the saw or burr is not altogether satisfactory. If one or other is to be employed, it is probably wiser to make with it a partial section of the skull, and complete the work with light blows of the chisel. A new instrument, combining saw and forceps, has recently been devised by Dahlgren of Upsala. He claims that he can cut out a large flap in four minutes. It is frequently, however, found that instruments will perform such perfect work in the hands of their inventors only, and the description of this forceps would not incline one to believe in the rapidity of action claimed by its originator. Horsley, whose experience is very large and whose rotating saw is one of the best, has abandoned its use and disapproves of the flap operation, as he sees no special disadvantage in leaving a permanent opening in the skull. It is certain, indeed, that patients who have large openings in their skulls suffer no inconvenience from the bony defect; still it seems wiser to restore the continuity of the cranial vault, provided this can be accomplished without subjecting the patient to additional risk. The popularity of the flap operation is increasing, but as yet there are imperfections in the technique of this method. A larger experience is needed before it can be definitely decided which of the two plans gives the more satisfactory results.—*Medical News*, April 18, 1896.

STERILIZATION OF CATGUT BY A MODIFIED CUMOL METHOD.

CLARK and MILLER (*Johns Hopkins Hospital Bulletin*, February and March, 1896), after a careful study of the method of Krönig in sterilizing catgut, found it necessary to modify that method so as to do away with the use of benzene, which is not a germicide and cannot be rendered sterile by heat without great danger. The following method was therefore adopted:

1. Cut the catgut into the desired lengths, and roll twelve strands in a figure-of-eight form so that it may be slipped into a large test tube.

2. Bring the catgut gradually up to a temperature of 80° C., and hold it at this point one hour.

3. Place the catgut in cumol, which must not be above a temperature of 100° C.; raise it to 105° C. and hold it at this point for one hour.

4. Pour off the cumol, and either allow the heat of the sand bath to dry the catgut or transfer it to a hot-air oven, at a temperature of 100° C., for two hours.

5. Transfer the rings with sterile forceps to test tubes previously sterilized as in the laboratory.

In making the catgut up into rolls, it is only necessary to tie the ends in the isthmus of the figure-of-eight to hold them securely in proper shape.

If convenient, it is better to use the hot-air oven for the drying process, but this is not absolutely essential, as a sand bath can be improvised, as suggested by Krönig, to serve this purpose.

A beaker glass of at least a half-liter capacity is imbedded three-fourths of its height in a tin or agate-ware vessel of sufficient capacity to permit three-fourths of an inch of sand to be packed about the sides and beneath the glass.

In drying or boiling, the catgut should not come in contact with the bottom or sides of the vessel, but should be suspended on slender wire supports or placed upon cotton loosely packed in the bottom.

During the drying process the beaker glass is covered with a sheet of pasteboard, through which a Centigrade thermometer is thrust so that the mercury bulb may be suspended about midway in the vessel. In this way the temperature can be regulated perfectly.

A Bunsen burner is placed under the sand bath, and the temperature in the beaker glass is slowly brought up to 80° C., where it is held for one hour, to dry the catgut. A higher temperature than 100° C. before the catgut is thoroughly dry renders it brittle. This step in the method must be carried out most carefully.

When the drying process is completed, the cumol is poured into the beaker glass and brought up to a temperature of 165° C., a little short of the boiling-point, with two Bunsen burners. A copper wire netting should be placed over the beaker glass to prevent the ignition of the cumol. This temperature is more than sufficient to kill all micro-organisms, and it is not necessary to allow the cumol to boil, which causes unnecessary evaporation (Krönig). The catgut is left for one hour at this temperature, when the cumol is poured off for subsequent use.

Cumol, which is of a clear limpid or slightly yellowish appearance when procured from the chemist, is changed to a brownish color by boiling.

The catgut is allowed to remain in the

sand bath until the excess of cumol is driven off and it appears entirely free from any oily matter. A period of one to two hours is usually sufficient to dry it thoroughly.

From the sand bath or hot-air oven it is transferred with sterile forceps to sterile test tubes, such as are used for culture media, in which it is preserved from contamination until ready for use. Small quantities should be placed in each tube, to obviate the necessity of opening them too frequently.

In conclusion, it is well to bear in mind that, while cumol is not explosive, it is very inflammable, and great care should be observed in lifting the wire screen from the beaker glass to prevent drops of the cumol from falling in the flame or on the heated piece of metal on which the sand bath rests, as it will take fire, flare up, and ignite in the beaker glass. Such an accident occurred three times in the experience of the writers.

CALCIUM SULPHYDRATE, A SAFE, EFFICIENT, AND ECONOMICAL DEPILATORY.

BRAYTON (*Medical and Surgical Reporter*, June 13, 1896) states that Boettger's paste is a perfect depilatory, and one easily and cheaply made. He first used this paste before the public clinic at the City Hospital of Indianapolis. It was the thickness of pancake batter, and was kept in a salt-mouth pint bottle, with the stopper well smeared with vaselin. It now retains its perfect depilatory power, after having been made six months.

Dr. Wishard has used it in removing the pubic and scrotal hair preceding operation. Dr. Joseph Marsee has also used it, and approves it. Such a depilatory as sulphydrate-of-calcium paste has a wide field in genito-urinary and abdominal surgery. It is antiseptic and alkaline; it is, therefore, an efficient soap and also a bleaching agent; the skin after its use is much whitened by the removal of dirt and superficial epithelium and oil, as well as by the removal of the hair. The hair is destroyed some distance down in the mouth of the follicle—much closer than by shaving. There is no more folliculitis excited than by ordinary close shaving. Any vigorous scrubbing of the skin with soap, followed by shaving, will open up the follicles, particularly on the back of the neck, to the entrance of cocci, and may be followed by a mild folliculitis or even furunculosis. A dusting powder of stearate of zinc may be advantageously used after the depilatory has been washed off in abundant water and the skin well dried.

The writer has applied the paste directly with his fingers and palms, as one would do in washing the arms with soap. But after using it in this way experimentally on several persons, he found the skin on the tips of his fingers and the ends of his nails softened and tender. A swab would be a safer method of applying it where one uses it frequently.

This paste is very efficacious in ringworm of the scalp. The hair can be cut close, the paste applied, washed off, and followed by the selected parasiticide.

Hypertrichosis of the chin and lip, scattering hairs, moles, etc., he treats with the negative needle of a small galvanic battery, according to the method of Hardaway. But if one has a patient suffering with hypertrichosis, the use of this paste once a week or once in two weeks will be safe, economical, and efficient.

Finally, it may be used to cleanse the hands and arms of the abdominal surgeon of hair and deep-seated filth in the follicles, from the finger-tips to the elbows, before laparotomy. The hair will grow again and require removal in from two to three weeks.

Calcium sulphydrate is made by passing sulphuretted hydrogen through a thick cream of well slaked lime till the lime will absorb no more of the gas. The paste thus made is moderately caustic.

RESECTION OF THE BLADDER.

KUESTER reports two cases of resection of the bladder (quoted by *La Médecine Moderne*, No. 49, 1896), both successful. The first case was that of a man aged forty-one years. There was a papillomatous tumor in the right ureter, which grew so rapidly that operation was required. Hypogastric cystotomy was performed. The extremity of the right ureter was divided, the tumor resected, the ureter freed and drawn up to the superior vesical wall, and the bladder and abdominal wounds closed. Recovery was prompt.

The second case was that of a tumor on the right side of the bladder. On opening this viscus the growth was found to be the size of a fist. The ureter opened in the upper portion of the tumor. The peritoneum was detached from the posterior bladder-wall, the latter was resected together with over an inch of the ureter, and this canal was then sutured to the upper portion of the bladder. The patient promptly recovered.

Correspondence.

LONDON LETTER.

By St. Clair Thomson, M.D., M.R.C.P., F.R.C.S.

We are in the month of congresses, and those of us who are forced to imitate "the gentlemen of England" and "sit at home at ease" have at least plenty of reading matter placed before us to while away our vacation leisure. For some time past it has been the custom to poke fun at these scientific picnics, and certain individuals have even obtained a specious kind of reputation by ostentatiously parading the fact that they consider such palaver meetings far below the level of their notice. Certain it is, also, that the confusion and want of organization in certain congresses which need not now be particularized have fostered the notion that the palmy days of congresses were over, and that nothing was to be expected from them but much cry and little wool. I venture to think that the recent International Congress of Dermatology, which has just concluded its session in London, will do much to recover the reputation of such gatherings. It was in the widest sense of the term representative, including such names as Kaposi, Besnier, Lassar, Hallopeau, Unna, Schwimmer, Tarnowski, Neissea, Campana, Di Amicis, Sabouraud, amongst the visitors, with Malcolm Morris, Radcliffe Crocker, Payne, Stephen Mackenzie, Colcott Fox, Pringle, Jamieson, and others on the organizing committee, and presided over by the veteran Jonathan Hutchinson. When the work done is placed before the profession, it will be seen that it was not of the mere *réchauffé* character one so often meets with, but that a vast amount of original work has been done with the express purpose of having it tried before this grand jury of dermatologists. As an onlooker I have little hesitation in saying that this last has far outstripped all preceding skin congresses, and that while much is due to the excellent way in which the dermatologists of London have worked together, the burden and heat of the day has been most admirably borne by the Secretary-General, Dr. Pringle. The particular feature of the gathering was the show of clinical cases; the abundance of rare cases was indeed remarkable, and it is a comfort to general practitioners to know that many of them remained undiagnosed! I was surprised to notice how few representatives there were from the States. I noticed Dr. Nevins Hyde of Chicago, and Professor White of Boston was one of those who responded to the toast of "Distinguished Visitors."

Although not present at the meeting of the British Medical Association in Carlisle, I observe that the quality of the communications made to it was also more than up to the average. As they appear from time to time I will send you the gist of anything striking. There was no therapeutic section, so that there are practically no novelties to record in your particular department. I should say that a note struck at the meeting was the beginning of a slight revolt against the autocracy of the laboratory, and its inefficiency in practice (by itself) was well shown in Sir Dyce Duckworth's address on "Prognosis." The same refusal to bow down to "pure science" is shown in the introduction to the System of Medicine, edited by Dr. Clifford Allbutt, and referred to in my last letter. The editor of this latest system therein says:

> The merely scientific physician is apt to be blind to useful manœuvres which rest rather upon the accidental than upon the more permanent qualities of things; indeed, the practical man often sees more of the surface of things than does the analytical man, and thus keeps more of the sense called "common." So it comes about that, in practice, personal tact and character are as important to the operations of a physician as scientific equipment. He has to deal with men of limited vision, full of accidental qualities, and subject to accidental disturbances; and the tact which deals with these confused and conflicting attributes is born rather of a wide survey of the outside of things, and of transitory conventions, than of a penetrating insight into causation. Excessive concentration, if it fit a man for analytical study, may unfit him for the world.
>
> Moreover, the purely scientific physician tends to undervalue opinion, as the man of the world to overvalue it.

However, that it is not science which is to blame for this, but the method of imparting it, is shown by a recent and much appreciated address of Mr. Pridgin Teale's, in which he observes:

> The burdening of the memory with mere facts which have no direct or obvious connection with science or practice—with facts, that is, unassociated with ideas of practical utility—is on the whole of little value educationally or otherwise, and such facts make but a transient impression on the memory. Indeed, the examinations in each subject of professional study should be restricted to the general principles and the more important facts of the science, and should be of such a character as to induce students in their preparation for it to observe and think for themselves more than is now commonly the case.

Now a temperate and well reasoned counter-blast arrives seasonably from Dr. Delépine. In a paper on "The Place of Pathology in Medical Education," he shows that the

conditions of life are so complicated, especially in the case of civilized man, that a mere superficial examination of natural phenomena, by means of our unaided senses, would seldom have led to more than rough guesses regarding the causation of disease. He drives this statement home by pointing out that it is not many years since there was a general belief in the production of frogs out of mud, of maggots out of flesh, of micro-organisms out of infusions, and that even in this century it is only by very carefully planned experiments that it has been proved that life, as it is known to us, is invariably a continuation of pre-existing life. To some clinicians who may sneer at the pretensions of science he points out that, as a matter of fact, they constantly make use of results obtained by scientific workers: they often use tests for sugar, albumen, blood or bile in the urine, elastic tissue or tubercle bacilli in the sputa, various parasites in the skin; they may even look for worms or protozoa in the blood; they will not scruple about recommending the use of anesthesia, of vaccination, of anti-diphtheritic serum, of antiseptic or aseptic dressings, of boiling of milk, of disinfection of rooms; they will know how to stop arterial and venous hemorrhage; they may prescribe such drugs as morphine, pepsin, nitrite of amyl, and take advantage of the ophthalmoscope, to say nothing of the X rays, and so on. These methods have not been elaborated at the bedside, for the bedside is not the place for prosecuting researches which might involve danger or even serious discomfort to the patient on no other ground than mere fancy.

Professor Delépine holds that long discourses on purely hypothetical matters are of little use to the student, as they foster in his mind the habit of doubting the value of scientific work at a time when he is not able to judge of the value of arguments. In fact, students would obtain a more useful knowledge of medicine if they had fewer lectures and more practical courses. His conclusions on this point are so valuable that I cannot do better than give them *in extenso*. Speaking of students he says:

> They should be made to attend thorough practical courses on (1) pathological anatomy, histology, and chemistry; (2) bacteriology as applied to the study of infectious diseases; (3) general clinical medicine and surgery, with special courses in special branches of clinical work such as diseases of women and obstetrics, diseases of children, infectious diseases, mental diseases, diseases of the eye, of the ear, of the throat, etc.
>
> Systematic lectures should be confined to courses on (1) etiology of disease and pathogenesis; (2) general considerations regarding the practice of medicine and of surgery. These courses should be as short as is compatible with a clear exposition of those principles which but very few students would be able to formulate for themselves from the study of facts.
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> Finally, I wish to say that if, in expressing my views, I have wounded the feelings of any who have opinions differing from mine, I will ask them to apply to me the words of Harvey: "I would not charge with willful falsehood any one who was sincerely anxious for truth, nor lay to any one's door as a crime that he had fallen into error."

Amongst the post-prandial utterances at Carlisle, I notice that the bishop of that diocese wittily turned the laugh against the profession which chiefly composed his audience. He was asked to reply to the toast of "The Clergy, including Ministers of Other Denominations." He entered a joking protest against being coupled with those whom, from his point of view, he must needs regard as "irregular practitioners," and pointed out that his position was analogous to that of a medical man who might be asked to respond for his fellow practitioners, as well as for herbalists and such like.

I regret to notice that another divine has been distinguishing himself in a less commendable manner. The Bishop of London is reported to have said that the teaching of science in elementary schools is "a very great evil," and he resents the idea that little children should be taught that thunder is a perfectly natural and explicable phenomenon. In spirit he is therefore at one with the present head of the Vatican. The Pope has recently nailed to the gate of St. Peter's at Rome his "Index Expurgatorius" for the year, and in this fairly bulky tome are included the works of Lombroso and several treatises on the subject of criminal anthropology. In referring to this, the *Lancet* recalls the following excellent story: Benedict the Fourteenth, or Macaulay's "favorite Pope" according to Trevelyan, was once asked by a nephew who wanted to follow in his uncle's footsteps what books he would recommend as best adapted to fit him for such a career. "You could not have consulted a better authority," was the Holy Father's reply. "Every year I make a list of the publications which are in all respects most worthy of perusal, particularly by aspirants such as you," and therewith handed him the last "Index Expurgatorius." The saying was even more wise than it was witty.

It is always interesting to try and "see oursels as ithers see us," and hence I frequently quote the public utterances of well

known men with regard to our profession. Lately Judge Vaughan Williams declared that there was a considerable affinity between the professions of law and medicine. Both required the same qualities, both were the recipients of confidences from their clients, and he would add that the clients rarely found their confidences misplaced. He, as a lawyer, often came into contact with doctors in the law courts, where the most important issues were often determined solely on the evidence of medical experts, who were for the most part safe guides in the administration of justice. One point, however, in which the professions differed, was that the medical profession was essentially progressive, while the legal profession was in a sense stationary. If the doctors of the last century came to life again, they would know comparatively nothing of contemporary medical science, but if the judges of former times were installed in the law courts to-morrow, they would try the cases quite as well, if not better, than the judges of to-day.

Amongst other events of this Congress month must be recorded the International Congress of Homeopathy. Although the city papers gave considerable more prominence to it than to the Congress of Dermatology, which was sitting at the same time, I was unable to find that the followers of Hahnemann brought any contribution to the elucidation of the study and cure of disease. Quite the majority of their papers were taken up with a review or a defense of their peculiar tenets.

It is more amusing to turn to the report of a Congress of Medical Herbalists, in Hull. The president announced that they should "defend themselves against the common enemy, and should act in order that they might obtain for their branch of the healing art that assured position which they deemed needful for their future welfare. The laws needed to be widened, so as to admit all schools of medical thought." It is a relief to read that the total of herbalists at the congress only reached thirty-four, so that probably in this direction the laws will widen slowly.

We have all learned some physics in our time; at least we have had to pass examinations in the subject; and although the latter in no way entails the former, it at least made us familiar with "Grove's battery." The inventor of this has recently died, and to many it will be a surprise to hear that he was a distinguished lawyer and judge, and that he found time apart from his legal duties to make several discoveries in electricity and optics, giving many contributions to scientific literature, including his famous work on "The Correlation of Physical Forces." The judicature thought to turn his scientific learning to practical value by giving him all the patent cases to try; but I hear that in this he was considered a failure. His interest in the scientific bearing of the question which might be submitted to him was so strong that he was apt to judge cases on the merit of the invention and not on the legality of the patent! He also consumed much of the time of the court in explaining to the litigants how much better they might have made their inventions! He had indeed a thoroughly scientific mind, and one cannot help thinking that he would have done much more valuable work if he had devoted himself entirely to science.

A verdict has lately been obtained which, if upheld, will enable us to do with very little more sanitary legislation. At the Birmingham Assizes a special jury did the work of many Acts of Parliament by giving tremendous damages against a "local authority" which had poisoned a citizen by sewer gas. The citizen was a Mr. Smith, and an action was brought on behalf of his widow and six children against a rural District Council whose sewers were found to "ventilate" into his house. This, it was alleged, gave him typhoid fever, whereof he died. An entirely unsolicited supply of sewer gas to Mr. Smith's premises was cut off, some time ago, by order of the District Council. But the work was done in a slovenly way; and it was held that the leakage accounted for the disease. The plaintiffs claimed $50,000; the jury gave them $17,500. An effective penalty like this will make "local authorities," in vulgar parlance, "sit up," and will show that sanitary legislation is not a mere expression of opinion.

With regard to the adulteration of foodstuffs, it is a satisfaction to read that legislation and improved methods of analysis have between them almost reduced this source of chronic poisoning to a minimum. Some ten to twenty years ago the adulteration of food was looked upon as so general that the jokes of the period reflected the popular and not ill-founded opinion. Grocers in those days were always credited with having made their fortunes by "sanding the sugar," and the cheapness of marmalade was accounted for by the abundance of the turnip crop. The

latest returns show that either because the original article is produced so cheaply (as in the case of tea), or because the analytical chemist has discovered unfailing tests, the reign of the adulterator is ended. In only two branches does he continue to evade the law. No trustworthy tests have yet been discovered to distinguish between butter and milk which have been artificially diluted, and the same products when coming directly from ill-fed cows.

We are rather apt in this country to think that we take the lead in sanitary matters. Judged, however, by the annual death-rates, we only come second. Sweden takes the first rank in Europe, with a mortality of 16.8 per 1000 per annum; in England it is 19; in Belgium 20.5; in Switzerland 21.4; in France 22.4; in Prussia 24; and in Italy 25 to 26. Austria, Russia and Spain are simply "out of it." To those who care for this subject and are not afraid of figures I commend the Registrar-General's Decennial Supplement. It is a rather bulky volume, but it only comes once in ten years. This, too, is my excuse for gathering some facts from it. It appears that the general death-rate has fallen from 21.3 per 1000 in the decade ending 1880, to 19 per 1000, and there is diminished mortality even between the ages of forty-five and sixty-five, where in the earlier decade there was a rise, generally attributed to the growing severity for elderly people of the struggle for life. Infant mortality shows but slight improvement. On the other hand, mature lives would appear to be prolonged. The average expectation of life at birth of males used to be 39.9 years, and of females 41.8 (1838–1854); this rose in 1871–1880 to 41.3 years for males, and 44.6 for females; and for the decade ending in 1890 it is further raised to 43.6 years for males and 47.2 for females. It would be well if insurance companies would lay these figures to heart and reduce their premiums somewhat. Amongst the various causes of death, I note that phthisis has diminished, while measles and diphtheria have increased. Cancer is spreading, and heart disease and renal disorders show the results of the strain of city life. The destructiveness of town existence is shown from the figures which indicate that for 10 people who die in rural England, over 13 of the same sex and age would die in the large towns. If 100 is taken as the average of the country, it is seen that in a county of manufactures like Lancashire the death-rate is 126, while in the eminently rural county of Huntingdon it is 73. In other words, a rural population dies only half as quickly as one given up to mines, mills, and factories.

The question of the spread of syphilis—at least in the army—is sure to force itself on public attention if things go on as at present. Even the *Times* has a notice from its Indian correspondent, who refers euphemistically to "certain forms of contagious disease" which are growing more prevalent in the army every year, while the type of disease is getting more severe. The returns for the last year show that the admissions into hospital from this cause have risen to 531 per thousand, that nearly 4000 British soldiers are incapacitated for duty at the present time from the disease, that others from the same cause are unable to stand the strain of a campaign, and that "one-seventh of the whole British garrison may now be taken as ineffective in case of war." When it is recollected that with our short-service system these soldiers are constantly returning to take their places as citizens, while recruits quickly fill the ranks —and also the hospitals—it will be realized how far spread is this devastation.

The outbreak of smallpox with which Gloucester celebrated Jenner's centenary in his own county is now, I hear, at an end. From one of the papers read at the British Medical Association it appears that the most vigorously vaccinated country in the world is Germany. Not only must every child in the empire be vaccinated within a year of birth, but he or she must submit to re-vaccination at the age of twelve. Soon after the enactment of this law the death-rate from smallpox fell to between 0.34 and 3.6 per 100,000 inhabitants; whilst in Austria, with no such law, in the same years the death-rates from smallpox were from 5 up to 50 and 78.8 per 100,000 inhabitants. In 1878 there were no deaths from this disease in the German army, and 15.4 per 100,000 men in the Austrian army. During the last decade the mortality from smallpox in Germany averaged only 7 per million inhabitants; in Austria, 580; in Belgium, 441. The reader of this paper suggested that if the German plan were adopted here, and every child vaccinated at birth and again at the age of twelve, we could rid the inhabitants of these islands of the scourge of smallpox. It was also held that as animal lymph "took" with as much certainty as human, and was free from all suspicion of causing syphilis, it should be employed if only for the purpose of overcoming prejudice.

The Royal Commission on Vaccination has at last held its final meeting, and after its report has to-morrow been submitted to the Queen, it will be made public. Meantime various reports are circulating with regard to it. According to a city paper the report may be roughly divided into three parts. In part one the commissioners are unanimous. Part two contains recommendations of a majority of the commissioners; and part three is the report of a minority of four.

Part one (says our contemporary) deals with the question exhaustively from a historical and pathological point of view. Vaccination is, on the whole, approved, but with reservations calculated to cause some astonishment amongst those who have not perused the volumes of evidence already published. This part winds up with a unanimous recommendation that the operation of vaccination should not be insisted upon when a parent makes a written declaration of his objection to it. In part two a majority of the commissioners recommend certain new methods of procedure, transfer of the vaccination business from boards of guardians to sanitary authorities, use of calf lymph, etc. In part three the minority wholly discountenance any State or public interference with a parent as regards vaccination.

This is quite unofficial and may be entirely wrong, but it tends to confirm what has been a common belief for some time past, namely, that the evidence collected was so strong against compulsory vaccination that the commissioners were loath to publish it. Anyhow, to all parties it is a comfort that this long-drawn-out Commission has at last closed its seven years of investigation.

Sir Willoughby Wade is of opinion that there is a very high degree of probability that rheumatic fever does depend on microbic poison, and that, as the point of absorption is most likely the throat, practitioners should attend to the disinfection of the throat in rheumatism, however slightly it may be disordered, and however slight the rheumatic symptoms may be. He gives as one of the best gargles:

℞ Mellis, ʒ iv;
Lotio nigr., ℥ viss.

The sprays he has found most useful are:

℞ Zinc. sulpho-carbolat., gr. iv;
Aquæ, ad ℥ j.

and

℞ Acid. sulphuros., ʒ j–ij;
Aq., ad ℥ j.

As an insufflation:

℞ Salol,
Sodæ bicarb., of each, grs. iij–v.

The spray should be directed through each nostril as well as through the mouth.

The danger of giving a patient a prescription of cocaine, even for external use, is well shown by the record of a case by Dr. Zangger, of Zurich. A lady had for eight years been in the habit of taking chloral in doses of twenty-five to thirty grains every night, to procure sleep. Owing to some trouble connected with sensitive gums, a physician gave her a lotion of cocaine for external use, forty-eight grains to two ounces, which so effectually soothed the patient that for two years she continued to apply the lotion to her gums, and probably also to swallow small quantities at a time. In this way she got through thirty grains a day. There was no reason for any such application, and she was reduced to a mere wreck with nervous prostration. Restraint was impossible, and although traveling on the Continent she could always procure an ounce at a time from a London drug store.

Some time ago I mentioned the question of a memorial to Keats to be erected at Guy's, the hospital which he "walked" for some years. It is now proposed to raise enough money to endow a bed in memory of him whose name was, as he himself thought, "writ in water."

I recently suggested that the British Climatological Society would have an uphill business in attracting attention to the advantages of British health resorts, but I referred more to the social than to the strictly climatic view of the question. I notice that in Clifford Allbutt's System of Medicine the climate of England is thus summed up by Drs. Hermann Weber and Michael Foster:

> We must acknowledge that the climates of England are rather moist, that the air is often dull and sunless, that rain falls on comparatively many days and is distributed over many hours, that the wind is often high and chilling, and that the shelter is limited. On the other hand, the hygienic conditions are better than anywhere else, the food is good, and the separation from the family is less. The climates of England belong to the most health-giving climates for the fairly vigorous, but are less good for the delicate invalid. If, however, a delicate person is obliged to stay at home or near home, it is often possible for him by judicious management to obtain great benefit by availing himself of all the advantages and defending himself from the injurious influences of the home climates.

The use of warm normal saline subcutaneous injections in cases of collapse from hem-

orrhage is well known. It has recently been recommended to make the injection into the loose areolar tissue of the axilla; and while it must be agreed that this is a most convenient spot, there are others who hold that in sudden and desperate cases, such as occur in midwifery practice, it is quicker to give the injection per rectum, a method which is not objected to by the patient or her friends and which is quite as effective. It can be administered with an ordinary enema apparatus, and the instruments for the subcutaneous injection are seldom at hand when required. In any case the fluid injected consists of a teaspoonful of table salt to twenty ounces of tepid water that has been boiled.

Many have deplored the insecurity of the varying strength of antitoxic serums sent out by various manufacturers. The *Lancet* has therefore done good work by instituting a special commission to investigate the relative strengths of the various antitoxic serums at present on the market. The results in some cases are certainly startling, for it appears that certain serums are far below their advertised strengths. Those from the laboratories of Behring and Schering are found to be much nearer the standard than certain ones of British manufacture. It is already suggested that this discovery may help to explain why the results obtained in England with the antitoxin have proved less brilliant than those recorded by German observers.

ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION, JULY 27-31, 1896.

(By a special correspondent.)

CARLISLE, ENGLAND.

We have had a most pleasant and interesting gathering, and if our number has been small it has only enabled us the better to appreciate the British hospitality which has been more than free—it has indeed been lavish. After the monster meeting in London last year the Association, probably for the first time in its history, was left without an invitation for this year's meeting, every other city in the kingdom being a little shy of having comparisons made with the great metropolis. All the more credit is therefore due to this Border city for the warmth of the reception given by its 50,000 inhabitants to the 650 members and visitors who have spent the week here.

These functions are generally headed by an address by the President and by general addresses in Medicine, Surgery, and occasionally in some other subject, such as Pathology, Obstetrics, or Public Health. The President for the year is always a local celebrity, and Dr. Henry Barnes of Carlisle selected for his discourse "The Medical History of Carlisle." The other addresses are not necessarily given by local men, and hence we had the opportunity of hearing a most able discourse from Sir Dyce Duckworth on "The Prognosis of Disease." Out of his ripe experience this scholarly physician gave us a gleaning which should be read and pondered by every practitioner. He first pointed out that "our minds have been much, probably too exclusively, intent on acquiring accurate knowledge of facts, and we are now encumbered with a mass of details and microscopic minutiæ, so large and so pressing that few amongst us have had time for a meditative survey of them in order to apprehend the great general laws which underlie and govern them. Our views are thus apt to be narrow and distorted; we argue too much from the particular; we fail to see things in due proportion, and so, less seldom than we might, have a wrong judgment in things medical.' Hence we must "sometimes lift our eyes from the microscope and away from the engrossing researches of the laboratory;" in fact, we must try to obtain larger vistas and strive to acquire some of that insight into a sick man's condition which a huddled heap of facts alone is not sufficient to give us. Our forefathers were perhaps stronger in this branch than we are, in spite of our increased advantages for exact observation, and it must be granted that we are apt to dwell too much on our detailed notes and our manifold instrumental aids, and too little on the patient, his personal peculiarities, and the intimate nature of his ailments. This is well shown in life assurance work, where the examiner is too busy with pen and ink and instruments to gauge the real inwardness and pregnant points of the case. This expression "inwardness" is one which Sir Dyce employed more than once in his address, and it will suggest the trend of his thought.

Although I fear they will read like a collection of "tips," I cannot refrain from giving some jottings I made of his remarks. *Inter alia* he pointed out that obese and elderly patients are bad subjects for all fevers and acute diseases.—The existence of chronic renal disease is incompatible with recovery from continued fevers.—In enteric fever preg-

nancy is always a grave complication, and abortion is common; epistaxis is not serious unless profuse; an abundant crop of papules does not denote any special gravity, and, *per contra*, absence of eruption certainly affords no ground for belief that the case is a mild one; excessive diarrhea is unfavorable. In the other exanthemata, prognosis is graver according to the early age of the patient and the abundance of the eruption.—Our recent experiences of influenza have taught us the special dangers of the peculiar pneumonia of that malady in the case of persons past middle life, and of the grave cardiac asthenia that may long persist.—The prognosis of diphtheria is better than was the case twenty-five years ago; the disease is exceptionally dangerous for children under two years of age, and although the outlook is better since the introduction of antitoxin, still, as Sir W. Jenner always said, "no case of diphtheria is unattended by danger." Nasal diphtheria should always excite concern. Vomiting, epistaxis, a rapid or infrequent pulse, and delirium, are all bad signs in this disease.—With reference to some chronic infectious diseases, he pointed out that pulmonary emphysema, asthma and chronic bronchitis delay the course of tuberculosis. Diarrhea, due to tuberculous enteritis, occurring in the course of any case of phthisis, is of the worst omen, and no less so is the onset of laryngeal tuberculosis. When aphthous stomatitis occurs at the end of any chronic or exhausting disease, it justifies our warning the patient's relatives that the powers of life are rapidly waning.—With regard to diabetes, the younger the patient the worse the prognosis; the course is also more acute in lean than in fat patients. Recovery from the coma of diabetes is almost unknown, although when threatening it may be averted by purgation with castor oil.—In rheumatic fever, if the seventh or eighth day be passed and no cardiac complication has supervened, we may not expect the occurrence of any form of carditis, or of pericarditis; but if a relapse occurs we may meet with this as a manifestation of the fresh attack. The younger the patient the greater is the risk of heart trouble, and this particularly applies to females.—Cancer of the liver is usually fatal within twelve or fifteen months, but sometimes a rapidly growing tumor will carry off a patient in a few weeks.—Cancerous growths of the peritoneum commonly kill within a year.—Pneumonia supervening in patients with pulmonary emphysema is fatal.—With regard to the once much discussed *arcus senilis*, it is more a diagnostic than a prognostic sign of vascular degeneration; by itself it is no sign of grave import; it may begin in the third decade of life, and death not occur for fifty or more years subsequently, whereas extreme arterial decay may be present and in progress without this indication.—In locomotor ataxia no absolute cure is to be expected, though life may be prolonged for many years; arrest is more apt to take place in those cases which set in violently.—As regards the recognition of impending dissolution, we should bear in mind that in pulmonary phthisis and cancer of the stomach we meet with the most protracted fatal issues. In poisoning by strychnine and in rapidly spreading peritonitis, as after rupture of gastric ulcer, the unwary may be misled as to the certain fatal issue (unless modern surgery is promptly invoked) by the perfect mental clearness of the patient up to the last moments.

Such are some of Sir Dyce Duckworth's suggestions for making our art in the highest and best sense practical; and they were conveyed in a manner which was concise without being tedious. In conclusion he commended us to bear in mind that no signs are invariably to be relied on, and that we should do well to make free use of the cautious word "if." This rather reminded me of the 'cutest practitioner I ever knew, who was in the habit in serious cases of telling the friends that the patient would recover if he would continue taking nourishment! This was always encouraging, and the doctor was sure of a score whatever turned up.

The address in Surgery was given by Dr. Roderick Maclaren, the surgical chief of the local hospital—called, after the county in which we are, Cumberland Infirmary. The very title of his discourse sets one thinking, for he took as his subject "Preventive Surgery," and one is inclined to ask if there is such a thing at all, and if we are not beyond the "preventive" stage when we have to invoke the aid of the knife. However, I am not here to criticise but to report, and will therefore give the Doctor's own views of the matter. He defined his subject as "surgery in which treatment or operation is entered upon or undertaken for some risk or sequence which we expect to result from an existing condition, and not on account of what is actually present at the time." Under this rubric he not only included such proceedings as the removal of adenoids and tonsils as a preventive measure of ear disease, deficient aëration, etc., but also such operations as

radical cure of hernia, treatment of enlarged prostate, appendicitis, depressed fracture, etc. He pointed out that even thirty years ago it was given as a dictum, "Beware of operations of convenience." It was alleged that such were attended by a greater mortality than operations of necessity; nature was endowed with the power of accommodating itself to the inevitable, but of resenting mere expediency. The orator pointed out that this view was mistaken, and arose because death or ill-doing was more striking when occurring in instances where operation was not a necessity. He attributed the evolution of his subject entirely to the discovery of anesthetics; and here I must deplore that he did not give more prominence to the much greater discovery by his own countryman, for Dr. Maclaren himself said that "a preventive operation should be devoid of risk to life, both at the time and during the healing stage," and without the principles of Lister to guide us this would have been utterly impossible in spite of anesthetics. Dr. Maclaren holds that the guillotine operation for the removal of tonsils should be reserved for those cases in which the tonsil is attached by a distinct neck; otherwise he prefers to give the patient a deep anesthetic and deliberately cut out—or, still better, with a blunt director tease out—the whole structure. Everybody who has a chronic suppurating ear goes about in deadly peril; every discharging ear which does not get right by treatment should be operated on. Some form of complete "mastoid operation" should be carried out. In the general prevention of surgical disease he holds that we do not sufficiently appreciate the harm of slight persistent contamination of the air we breathe; hence a plea for fresh air and a sharp lookout for sewer gas. He points out that the besetting sin of surgery is that it has a narrowing tendency, and concludes with these words: "We need to put into our work all our knowledge and thought. Superficiality means failure. The human interest of all we do is intensely absorbing, consequently there is just the risk of looking upon surgery as a thing by itself, of losing our sense of its true place and proportion, and confining our thoughts within a groove of little breadth. In preventive surgery we have a tendency in an opposite direction. This tendency not only brings us into immediate contact with what the physician and general practitioner is thinking and doing, making our life and work a portion of the vast organization for the prolongation of existence, the diminution of suffering, and the prevention of disease, which we are proud to consider as the reason of our existence; but it still further associates us with the great mass of scientific and intellectual advancement which is outside the limits of any profession, of any nation, and of any time."

I have dwelt so long on these two interesting communications that I can only touch on a few points that I picked up when going around the various Sections. Dr. J. A. Campbell, the medical superintendent of the county asylum, in opening the Psychological Section described the effects of small landed properties on their owners as regards the production of insanity and the general degeneration of the race. He said that to be tied to a limited patch of ground in, perhaps, a remote district, without scope for improvement and with little time or opportunity to meet with fellow men or women, except in one's own limited area, must have a generally benumbing influence and prevent mental improvement if not actually cause mental degeneration.

The X rays were well to the fore, the discovery of Roentgen having been made public only since the last meeting of the Association. A skiagraphic laboratory was fitted up, and demonstrations were continually being given by Mr. Sydney Rowland, who pointed out that the extraordinary reports as to the efficacy of the rays were much exaggerated, and calculated to do harm rather than good.

In connection with a discussion on Cretinism, Dr. Ruston Parker exhibited by the aid of a lantern between fifty and sixty photographs of cretins. It was stated that no other disease existed, the treatment of which lent itself so admirably to photographic display; and that the treatment of cretinism by thyroid extract was undoubtedly one of the greatest triumphs of modern medicine.

A full debate took place on the subject of the Nauheim Treatment of Heart Disease, which is very much to the front here at present. On the whole, members appeared favorable towards it, needless to say when administered in suitable cases. It was curious to observe that a visit to this German health resort appears to have a strengthening effect on one's faith in the efficacy of its waters. The skeptical ones were mostly amongst those who had never visited Nauheim; they questioned the possibility of a cardiac area being as much reduced as certain diagrams would lead us to believe. Not that any imputation was cast on the good

faith of the makers of these diagrams, but it was frankly suggested that their ardor overbalanced their unbiased observation. In connection with this, Dr. B. Thorne gave a demonstration in the wards of the Cumberland Infirmary on the movements and baths used in the "Schott method" of treating heart disease.

In the Section of Surgery the whole question of the Surgical Treatment of Prostatic Hypertrophy was ably and exhaustively reviewed. Mr. Reginald Harrison confined his remarks to the treatment of prostatic hypertrophy by vasectomy. He has apparently had a larger experience of this operation than any other surgeon on this side, and his results have been encouraging, for out of ten cases of bilateral division of the vas deferens, five received great (and Mr. Harrison believes lasting) benefit. Mr. Mansell Moullin thought that in advanced age, when the sentimental objection to castration had ceased to exist, it was an operation to be advised in suitable cases, but that in earlier life prostatectomy was to be preferred if the condition of the patient was satisfactory enough to allow of such an operation. Dr. Sandberg, of Bergen, spoke in favor of castration or of ligature or division of the vas deferens. Professor Cameron, of Toronto, related his experience of bilateral castration, gained in operation in nineteen cases: one patient died from suppression of urine, and in two others mental symptoms developed; in one of these latter cases an extract of fresh testicle of the sheep was administered, as had been suggested by Brown-Séquard, and improvement quickly followed.

The province of medicine has been further raided by the surgeons. Dr. Lauenstein, of Hamburg, in a paper on Subphrenic Abscess, said that he emphatically considered that such cases should at once be handed over by the physician to the surgeon for operation. However—perhaps to soothe the ruffled feelings of the physician—he held that afterwards the patient should be returned to his medicine man for the administration of tonics and the regulation of diet!

Dysmenorrhea was discussed in the Section of Gynecology, and while dilatation by graduated metal sounds was lauded for the relief it secured, it was held that in certain cases benefit accrued from rest, hot vaginal douches, tampons of ichthyol and glycerin, and saline aperients. Morphine and alcohol should never be recommended. Bromides, belladonna and cannabis indica were recommended, and viburnum (both prunifolium and opulus) were excellent sedatives. Other speakers laid stress on constitutional causes, and of course the "bike" came in for its share of praise.

In one Section a layman, the Secretary of the Charity Organization Society, enlarged on the abuse of the out-patient department. It appears that in the course of a year more than a million patients seek and obtain practically gratuitous relief in the out-patient room. When we consider that the population of London is four and a half millions, it is sufficient to note that practically one in four of its inhabitants makes use of its charities. It is not for me to enlarge on the injustice to the charity and the profession wrought by this sort of thing; reform, like charity, should commence at home. In another Section Dr. Laffan stated that a Dublin hospital had received within its walls for a long time a man who died worth over $700,000! .

"Counter Prescribing" was the subject of a paper contributed by Dr. George A. Bateman (London), who said that if the medical profession all over the world were pooled they would unanimously condemn the practice of medicine by chemists and druggists. The examinations for a registered chemist were never intended to be examinations in either medicine, surgery, anatomy, or pathology. He quoted cases of incorrect diagnosis. Counter prescribing was becoming very general, and a series of successful prosecutions under the Apothecaries Act would do good by bringing this matter to a practical issue. Medical men must, however, expect pharmacists to retaliate by proceeding against the members of the profession who kept dispensaries to sell opium or any scheduled poisons. Before enforcing their legal rights the Association should approach the Council of the Pharmaceutical Society and ask them to use their moral power in restraining their licentiates from breaking the law and infringing the rights and privileges of the medical profession.

The Section of Ethics was the only one where the personal and immediate interest in the questions discussed inspired debates that were more noteworthy for their warmth than for their increase to truth. One member held forth on "Local Organization of the Profession," and urged that they who were slow to learn the lesson of trades unionism must combine if they looked for any prospect of improvement. With unity and additional powers they might live to see the medical

practitioner more honored in his career and better rewarded for his services. Another speaker referred to the British Medical Association as the most helpless, hopeless, and futile organization ever seen in this world. It reminded him of a huge whale stranded on the sands, incapable of doing anything but flap its tail! With regard to this, I noted that the Association now numbers 16,332 members, that its annual receipts amount to about twenty thousand dollars, and that its reserve fund is between $250,000 and $300,000.

It would be impossible for me to give a clear report of the general business meetings without understanding the exact "inwardness"—as Sir Dyce Duckworth would say—of its political parties. Evidently it was expected that there would be "shillelahs and wigs on the green," as Mr. Lawson Tait had a motion on "the desirability of an alteration in the government and executive of the Association." However, things passed off fairly peaceably, and I understand that a *via media* has been found between the reformers and those who stand by the old ways.

It will be of more interest to your readers if I say something of next year's meeting. A cordial invitation has been received from the Montreal Branch to hold the next meeting in that city, and this invitation has been accepted. The President on that occasion will be Prof. T. G. Roddick, Professor of Surgery in the McGill University. In 1897 there will be an international exhibition in Montreal held to celebrate the landing of Sebastian Cabot on Canadian soil, and it is proposed to arrange matters so that members from this side can attend the congress of the British Association for the Advancement of Science at Toronto and then go on to the meeting of the B. M. A. (as it is briefly called here) at Montreal. At first sight it struck me that this would interfere considerably with the plans of those of us who had intended visiting Moscow next year, but on suggesting the fact that the events would clash I was met with some observations which showed that the officers of the Association had no great desire to oblige their Russian confrères after the reluctant way in which English had been admitted as one of the languages at the Muscovite congress. From others, however, I heard that the choice of a meeting-place outside the British Isles was for "political reasons"—the politics, I hasten to add, being not of an international character, but strictly of a British-Medical-Association nature. Indeed, it would appear that so many connected with the greatest medical society in the world have had their feathers ruffled during the past year, and at this last annual gathering, that it is thought well to have an interregnum before they once more meet together on their native soil. I give this as mere gossip and therefore only worth an *on dit*. Anyhow, there can be little doubt that the Montreal meeting will be a brilliant one. Our Canadian cousins are already preparing for it, and will give a hearty welcome to their kith and kin from the States and from the old mother country. Several were over here forming the committee charged with the formal invitation, and, as well as being distinguished physicians, they were some of the pleasantest men one could desire to meet.

Not content with settling for next year, we are already looking forward to meeting our friends in 1898. An invitation has been received from Edinburgh to hold the annual meeting for that year there. Although this cannot be officially settled until the Montreal meeting begins to sit, we may look upon it as an accomplished fixture. My regret at the termination of this pleasant week is therefore mitigated by the thought that many of the friends made will be met on the other side in August of next year, and in 1898 in the "modern Athens."

PARIS LETTER.

By Arthur R. Turner, M.D. (Paris).

During the long vacation of the summer months the Faculty of Medicine of Paris and the hospitals of the city are almost deserted. Not only are no lectures delivered at the school, but the principal men are usually away and their places in the hospitals taken by some of the younger ones, who at times are obliged to undertake the duties of two services simultaneously. It has not yet become the custom in Paris, as it is in Germany, to deliver short vacation courses of lectures and demonstrations during the summer months for the benefit of graduates and visitors. Some of the French medical papers, however, have called attention to the advantages of such courses. One objection is that Paris is usually exceedingly hot and close during the summer, and that the distance between the various hospitals would almost necessarily prevent a number of courses being delivered at short intervals during the day, a

condition of success which could not well be dispensed with.

Within a month three deaths have occurred among the prominent men of the medical profession in Paris. The first was that of Dr. Pajot, Emeritus Professor of Obstetrics of the Faculty of Medicine. The other two were those of Dr. Nicaise, surgeon of the hospitals, who within the last few years has edited some of the works of the most distinguished French surgeons of the Middle Ages, such as Guy de Chauliac; and Dr. Després. The latter, though a man of intelligence and a skillful operator, was above all known as a bitter enemy of antisepsis. He would never allow any of the antiseptic or aseptic methods to be used in his wards, and remained faithful to the methods of thirty years ago. This had given him the name of being the surgeon of the "*pansement sale*," or "dirty dressing." Another singularity was that he was always on bad terms with the lay nurses, who during the past few years have replaced the Sisters of Charity who were formerly charged with the service of the French hospitals. His quarrels with them had caused him to be reprimanded for rudeness by the Council of the Assistance Publique.

It may be said that the question of the foreign students in France, which has given rise to so much agitation, has been definitely settled. The Minister of Public Instruction has sent a circular to the officials at the head of the various universities, in which he notifies them that the following rules will be adopted: Foreign medical men and students not possessing the French Baccalaureate, and not having passed the scientific studies of the first year, will be allowed to enter the French medical schools, but the diploma conferred will not allow its possessor to practice in France. All students wishing to practice in France must pass the French Baccalaureate and the first year of scientific studies before being allowed to take their first inscription. An exception is made only in favor of students coming from certain countries with which agreements have been made to recognize the latter's examinations.

The result of this decision is that by far the greater part—in fact almost all—the foreign students coming to Paris will obtain a diploma which will not give them the right to practice in France.

At a recent session of the Société Médicale des Hôpitaux a number of cases were reported where the method of making a rapid diagnosis of enteric fever by means of the blood-serum of the patient had been successful. Dr. Widal at the same meeting gave an account of the method which he now employs, and which is both easier and more rapid than the one first described. He first takes ten drops of a culture of the bacilli of Eberth, one or two days old, grown in carefully neutralized bouillon, and adds a drop of serum obtained from blood drawn from the finger-tip by means of a slight prick. A drop of the mixture is placed on a slide, covered with a cover-slip, and examined at once under the microscope, comparison being made with a drop of the culture not treated by serum. If numerous and confluent masses are to be seen, the diagnosis of enteric fever is made; otherwise the preparation is examined half an hour later, and if even then the results be negative the preparation should be examined some hours later. In case it should be desired to carry on the examination still further, the method should be the one used at first.

In 1895 Dr. Frémont, a physician practicing at Vichy during the summer and at Nice during the winter, presented to the Academy of Medicine some specimens of pure gastric juice obtained from dogs whose stomachs had been separated by operation from the remainder of the intestinal canal. This operation did not seem to have any very serious result, for after a year has elapsed Dr. Frémont reports the animals fat and in good health, and in no wise to be distinguished at first view from any other well fed dogs.

This spring Dr. Frémont presented to the Academy of Medicine a report on a number of cases of enteritis, cholera nostras, influenza with gastro-intestinal complications, and various forms of dyspepsia, treated with such gastric juice. The dose varies from 150 to 500 grammes a day, and may be given in milk, in water, or in beer.

Dr. Frémont concludes that the pure gastric juice relieves at once the gastric disturbances of hypochlorhydric patients, and enables apeptic patients, who seemed almost lost, to digest and to increase in weight.

In his report on this subject Dr. Frémont quotes a number of cases where his method has been successfully used by various other physicians.

Two medical congresses have just been held in France. The first was the Seventh Congress of Alienists and Neurologists, the second the Third Congress of Internal Medicine. Both met at Nancy.

—THE—

Therapeutic Gazette.

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Original Communications.

*THE TREATMENT OF PELVIC INFLAMMATORY CONDITIONS THROUGH VAGINAL INCISION.**

BY E. E. MONTGOMERY, M.D.,
Professor of Clinical Gynecology in the Jefferson Medical College, Philadelphia.

The route by which pelvic disease shall be attacked is a subject which, possibly more than any other, occupies the attention of the gynecological specialist. Of the routes commonly considered, the supra-pubic and the vaginal, the former has been the one usually followed, and by many it is still considered the more promising of the two. Its advantages, as asserted by its advocates, are that through such an incision the pelvic organs are exposed to sight and touch, the dissection can be made more complete, and greater security against accidents and hemorrhage obtained. Its disadvantages are: the longer, more painful convalescence, more radical procedure required to meet some indications, drainage against gravity, infection of sutures and consequent abdominal sinus, abdominal cicatrix, and possible ventral hernia.

The vaginal incision offers the following advantages: it permits the pelvis to be explored,

*Read before the Pennsylvania State Medical Society, at Harrisburg, May 20, 1896.

pus-cavities in the broad ligament evacuated, tubal collections evacuated through the broad ligament without opening or soiling the peritoneal cavity; the uterus, ovaries and tubes may be removed where the disease is bilateral; drainage is from the most dependent portion of the pelvis; and the patient is spared the annoyance of an external incision with its sequelæ.

The truth lies between the two extremes; both procedures have their place, and each affords special advantages.

To better understand the purpose of the vaginal procedure, it will be well to consider briefly the conditions we are called upon to treat. Pelvic inflammation, in the great majority of cases, extends through the uterus to the tubes and ovaries. We should not forget, however, that it may also extend by the lymphatics and blood-vessels: pus collections of large size may occur in the cellular tissue of the pelvis without the presence of tubal disease. Tubal disease resulting in pus collection may form a large sac of the tube, which may rupture into the pelvis and become encysted, or into the broad ligament, forming a large mass; in either of which cases removal of the pus would be difficult without rupture and consequent soiling of the abdomen. In many cases these collections are not sterile, and their escape into the peritoneal cavity exposes the patient to the danger of general peritonitis. Few would assert the necessity for sacrificing the ovaries and tubes simply because they were situated near a pus collection. Nor does it seem wise that the peritoneal cavity should be soiled by a pus collection which can be emptied by an incision through the vagina.

As inflammation develops in the tube, unless it rapidly extends to its parietes and causes adhesions, the inflamed tube from its increased weight gravitates lower in the pelvis and is frequently found in Douglas's pouch, filling up the retro-uterine space. A large collection either posteriorly or laterally can readily be reached and evacuated through the vagina without breaking down the barriers nature has provided against the invasion of the general cavity. The tubal sac can be opened up, irrigated, packed with iodoform gauze, and thus obliterated. It is to be acknowledged that this is not a sure cure, that pockets of pus may remain unopened and the patient may have to undergo a subsequent operation; but the procedure enables us to remove the offending cause, permits the nutrition and general condition to be improved, and in many cases will result in cure, while the danger to the patient has been the minimum.

In acute inflammation of the pelvic cellular tissue, where serous and plastic exudate is extensive, vaginal incision and drainage affords an opportunity to anticipate suppuration and free the patient from its dangers, and remove the exudate before its organization, which would otherwise result in the hard, board-like floor that is so difficult to overcome.

Where the appendages of both sides are so destroyed by inflammation as to render their removal desirable or necessary for the future welfare of the patient, no one will deny that the uterus is an organ of but little prospective value; with the removal of the appendages its function is dissipated. But while it is thereafter a functionless organ, its retention does not fail to have an influence upon the future comfort of the individual. The cases are the exception where pelvic disease, whether in the tubes or cellular tissue, has not passed through the uterus.

Not unfrequently, tubal collections will be found extending into the uterine end of the tube, so that the retention of any portion of the tube means the retention of infected tissue, and endangers recovery. Even if the uterus be free from serious infection at the time of operation, it is usually enlarged, contains inflammatory exudate, and in the subsequent involution its increased connective tissue imprisons and compresses the nerve-filaments, producing hystero-neuroses which continue to render life uncomfortable after the removal of what seemed to be the pathological lesions.

Not infrequently patients, after the removal of both ovaries, continue to menstruate or have irregular hemorrhages and more or less profuse and offensive leucorrhea. The retained organ may subsequently become infected or be the seat of malignant disease. These various sequelæ have become so well recognized that some surgeons have resorted to the supra-vaginal amputation of the fundus in such cases as require the removal of both ovaries.

It is recognized that by this procedure the operation is cleaner and more effectively accomplished. But while the cervix thus left is probably the least offending portion of the uterus, it should not be forgotten that it is supplied with its own lymphatics and retains enough of glandular tissue to be a ready focus for reinfection. This is the portion of the

uterus most subject to malignant degeneration; it should therefore accompany the remainder of the organ when the greater part is exterminated. The vaginal incision affords a ready method for the extirpation of the uterus and its appendages.

While vaginal incision through the anterior fornix (anterior colpotomy) has been frequently done for removal of one appendage, and also for ventro-fixation, I do not believe it is so satisfactory as would be the abdominal incision. The form and extent of the vaginal incision will depend upon the situation and character of the disease. In all cases of drainage a free incision should be made. It is a mistake to make too small a puncture. The finger should enter and be used to break up adhesions and ascertain the presence of pus collections. All pockets which can be discovered should be opened, irrigated, and packed with gauze.

Any operation should be preceded by rigid asepsis, and effort should be made to render the vagina as nearly sterile as possible. The vulva and vagina should be scrubbed with a two-per-cent. solution of creolin, two ounces of tincture green soap having been added to each quart of the solution. This is most thoroughly accomplished by means of the fingers wrapped with gauze. The superfluous solution is removed by irrigation with sterile water, and the parts are then washed with alcohol.

The cervix is seized with a double tenaculum, and when the object is exploration or drainage an incision is made posterior to the uterus and broad ligament. If the mass is in the broad ligament, the latter may be torn through with finger and forceps, and the collection reached without opening the peritoneal cavity; no injury need be done to either artery or ureter. The operation may be expedited by an additional short incision near to the uterus on the affected side.

The pus-cavity is opened, irrigated (preferably with hot saline solution), and packed with iodoform gauze. The vulva is covered with sterile gauze, which should be frequently changed. The packing may remain for three or four days, dependent upon the condition. Its removal is followed by irrigation and repacking sufficient to keep the vaginal incision open.

The vaginal incision may be of service in exploring for collections in the pelvis, from rupture of tubal gestation, and formation of hematocele, or for pus and serous collections in the posterior cul-de-sac. Pryor has lately suggested incision through the posterior fornix in retro-displacement with extensive adhesions: the adhesions are broken up, the uterus, tubes and ovaries loosened, and the uterus tilted forward and kept in place by a mass of gauze behind it, while another in the vagina pushes back the cervix.

Uterine Castration.—The removal of the uterus and appendages, denominated uterine castration by Pean, is done for conditions which indicate the removal of both appendages. The operation is performed as follows: An incision is made around the cervix and extended laterally behind each broad ligament; the bladder is pushed off anteriorly until the peritoneum is reached and opened; the posterior cul-de-sac is then opened, when the uterine arteries on either side may be secured with ligature or forceps, and the cervix freed and amputated; the body of the uterus is then readily brought through the anterior opening, the ovaries and tubes rolled out, the remaining portion of the broad ligament secured, and the genital organs removed. Hemostasis may be accomplished by either ligature or forceps. The vagina is lightly plugged with gauze.

It is objected to this procedure that it is not thorough in cases of extensive adhesions, but it is not required to be. The uterus may be cut away, and if the tubes are very adherent and at all distended they may be broken open and packed with gauze and be permitted to become atrophied and obliterated.

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*THE USE OF COLD IN FEVERS.**

By H. A. Hare, M.D.,
Professor of Therapeutics in the Jefferson Medical College of Philadelphia.

Gentlemen: I bring before you to-day, as the first case, a patient suffering from the early stage of typhoid fever. You will notice from the chart which I hand to you that he has the characteristic evening rise and morning fall of temperature so constantly seen in typhoid fever, but by no means confined to this disease: you will remember that even the normal bodily temperature is slightly higher in the latter part of the day than in the morning. I have not brought this patient before you with the object of discussing the general treatment of cases of enteric fever,

* Clinical lecture delivered at the Hospital of the Jefferson Medical College.

but because I wish to give you my views as to the value and limitations of the application of cold for the reduction of abnormally high bodily temperatures, merely taking typhoid fever as a type of continued fever in which the temperature has to be controlled, in the majority of cases, either by medicinal measures or by the use of cold.

First let us consider the disadvantages which accrue from the use of so-called antipyretic drugs—remedies which, as you know, have until within a year or two been most popular with a large number of the profession in controlling febrile movement. Almost as early as their first introduction, original calorometrical experiments made by Professors Wood, Reichert, and myself, and a number of other investigators, proved beyond all doubt that the majority of the coal-tar antipyretics, if not every one of them, control fever by decreasing the production of heat in the body and also by increasing its dissipation or elimination of heat. Under such circumstances bodily temperature must speedily fall. Theoretically, therefore, these remedies would seem at first glance to be the very best we could employ in the treatment of fever; but a little thought will make clear to you that, while they accomplish the reduction of the temperature, they must at the same time produce two results which are quite opposite to those which we seek. In the first place they exercise a powerful influence over the circulation, the respiration, and the organs of elimination as represented by the kidneys and liver. Again, they exercise a more or less destructive influence upon the blood and its closely related organ the spleen, interfering to such an extent with the oxygen-carrying properties of the red blood-corpuscles that their use cannot but be associated with marked perversion of many of the normal functions of the body.

I do not wish you to think from what I have said, however, that I utterly condemn such remedies. On the other hand, I believe that our rule in the practice of medicine should be always to be moderate in our judgment as to the advantages and disadvantages of remedial measures, whether medicinal or otherwise. The occasions on which the antipyretics will prove of value are, however, very limited, and in the vast majority of cases the physician should encourage and employ the use of cold to the exclusion of these drugs.

Let me point out some of the reasons why cold is both theoretically and practically the true means of reducing febrile temperature occurring in the course of infectious diseases.

As you well know, the body puts into effect several processes by which it endeavors to protect itself from infectious disease when first attacked. Those who believe in the theory of what is known as phagocytosis, or that certain leucocytes in the body attack, ingest, and destroy germs of infectious diseases which gain entrance into the organism, also believe that antipyretic drugs in all probability exercise a deleterious influence upon the activity of these protecting phagocytes; in other words, these remedies to a certain extent render feeble one of the methods by which nature protects us from disease.

Secondly, fever is, no doubt, to a great extent a protective process; its development is an effort on the part of nature to protect us from the results of infection. There are a large number of experiments which point to the probability that high temperatures are not as favorable to the growth of many micro-organisms as the normal temperature, and there are many more to prove that any reduction of the bodily temperature below normal greatly increases the susceptibility of the individual to infection and its results. Again, it is a fact that the production of heat in our bodies is due to the oxidation of our tissues, and therefore fever means an increase in the oxidation processes. We also know that it is by means of oxidation that many vegetable poisons which are taken into our bodies are destroyed, and in all probability most of the animal poisons which are produced in the intestine or which are swallowed with the food are also destroyed in this way. In other words, the system by means of oxidation destroys the effete materials, just as a crematory does which is employed for incinerating refuse. If, therefore, the antipyretic drugs of the coal-tar class, of which I have spoken, diminish the manufacture of heat, they must also diminish the oxidation processes in the body—that is to say, the body is unable, when under their influence, to oxidize and discharge the poisons which are produced by the infecting micro-organisms.

Thus we learn that the use of these drugs prevents the body from protecting itself by destroying the poisons by phagocytosis and by fever with its associated processes. We also know that they prevent the liver and spleen from carrying out their ordinary func-

tional activity; that they depress the nervous system, and particularly the vaso-motor nervous system, rendering the patient more susceptible to cold and congestion; and finally, we have experimental evidence to prove that the administration of antipyrin and similar compounds renders animals more susceptible to infection by disease than if they had taken no drug.

These are, then, some of my chief reasons for thinking that antipyretic drugs are inadvisable. What reasons can I give you for strongly advocating the application of cold in the reduction of fever? They are briefly these:

First, none of the organs of the body are strained in the effort at eliminating foreign materials, nor are their functions perverted by the presence in them of powerful remedies. On the contrary, the proper application of cold, associated with active rubbing of the skin to bring the blood to the surface, improves the circulation all over the body, increases nervous and circulatory activity, produces an elasticity of the blood-vessels, which is destroyed by the use of drugs, and increases the action of the kidneys, the organs which eliminate from the body most of the impurities.

Naturally, you may think me inconsistent in stating that fever is a protective process and yet urging you to use cold for its reduction; and I confess that these statements must seem paradoxical, but in reality they are not so. There is a great difference between stopping oxidation processes by the use of drugs, and abstracting heat from the body by the use of cold. When cold is used, heat-production probably goes on with even greater rapidity, at least after a brief time. By the bathing the bodily temperature is prevented from rising to the point at which the fever would be dangerous in itself, while at the same time the poisons produced by the disease are more rapidly burned up by the increased rapidity of oxidation. In other words, the application of cold simply increases the draught and so burns up the refuse more rapidly than before.

These conclusions are not merely theoretical ones. Careful experiments by Liebermeister and other investigators in this line prove that in many instances leucocytosis is markedly increased by the use of cold, and it is a well known fact that by its use internal and external congestions are avoided which if they came on in full force would seriously imperil the patient's life.

Before closing I wish to emphasize one fact which, to my mind, is the most important of this lecture, namely, the manner in which the cold should be used in the reduction of fever. There are those who claim that fever, particularly typhoid fever, must always be reduced by actually placing the patient in the bath-tub, the water of which is at a temperature varying from 70° to 80°, or even lower; but it has always seemed to me that equally good and in all probability better results could be obtained if the use of cold were fitted to the case, just as the dose of digitalis or any other drug is fitted to the case. No one would think at the present day of asserting that every case of heart disease requiring digitalis as a cardiac tonic should receive exactly twenty drops of the tincture three times a day, but the common assertion would be that the dose of digitalis should vary with the necessities of the case. If, therefore, by means of careful sponging or the use of water, with friction, at a temperature of 85° or 90°, you can reduce a patient's temperature within a short time to 100° or 101°, surely this method is sufficient for the case. On the other hand, if colder water is required, it must be used, and the time of its application prolonged in direct proportion to the degree with which the fever resists treatment. And, finally, if repeated sponging with ice-water or with water at 60° or 70° fails to reduce the temperature, then it will be necessary to place the patient in a bath and perhaps to keep him there, rubbing him all the time until his fever is properly reduced. There is no such thing in medicine in connection with the use of drugs as recommending one definite dose for every case of any disease, and there is no such thing as a correct recommendation of one temperature or one method of the application of cold to every case of a given disease. To be successful practitioners, you must make your "punishment fit the crime," or, in other words, you must make your remedy and your dose fit your case just as the tailor makes a garment fit each man.

In conclusion let me say one word to you about the comparative value of antipyretic drugs and cold sponging or bathing in the treatment of non-infectious fevers, such as are represented by sunstroke. Clinical experience has proved that under these circumstances the antipyretic drugs possess little value, and that we must always rely chiefly upon cold bathing for the relief of patients suffering from thermic fever.

NOTES ON THE TREATMENT OF INTESTINAL INDIGESTION.

By Hugh S. Cumming, M.D.,
United States Marine Hospital Service, Norfolk, Va.

All physicians have seen, and often vainly tried to cure, victims of intestinal indigestion.

The characteristic distress in the epigastrium or right hypochondrium, beginning several hours after the ingestion of food, and accompanied by distention of the intestines with gas; constipation; changes in the character of the urine; and other disagreeable symptoms, should make the diagnosis usually clear. These disturbances of the secretory apparatus are the symptoms we see in most cases, but more marked than these are the abnormal nervous phenomena, mental depression, irritable temper, sleeplessness, and headache. When a patient becomes the victim of intestinal indigestion, the whole disposition seems to change.

This distressing condition may be caused primarily by an abnormal condition of the digestive tract, as well as by imperfect mastication of food, due to haste in eating or to imperfect teeth; or it may be caused by deranged gastric digestion, for perfect intestinal digestion is dependent upon a properly prepared acid chyme, stimulating a normal liver to secrete normal bile, the resultant products being acted upon by normal pancreatic and intestinal juices.

In the treatment of these cases of intestinal indigestion, our first care should be, of course, to restore mouth and stomach functions; but even should the causes be primarily in the mouth or the stomach, the intestinal tract with its important organs is often so thrown out of gear that nature alone seems unable to repair the injuries.

In such cases, as well as in those primarily caused by an abnormal pancreatic juice, an artificial or natural substitute for the diastatic ferment of this juice has been long needed and sought for by the profession. Formerly, the effort was to get a ferment through the acid gastric juices into the alkaline intestinal secretions without destroying its power. This, however, is evidently a useless undertaking now, as we have found from careful clinical observation that taka-diastase gives perfectly satisfactory results in the treatment of such conditions.

In every case in which I have used taka-diastase, the result has been markedly good. I have been able to note a gradual gain in flesh and a rapid change in the general mental condition of the patient. I also give careful instructions with regard to dieting, insisting upon a variety of food, slow chewing, and avoidance of excess of any kind, with special caution with reference to acids and condiments.

I have welcomed the addition of taka-diastase to our list of modern remedies, for certainly no trouble is more common than intestinal indigestion, nor has any disease come under my observation which has been so troublesome to treat or so difficult to overcome.

CASES ILLUSTRATING THREE METHODS OF HYSTERECTOMY FOR DIFFERENT INDICATIONS.

By George Erety Shoemaker, M.D.,
Gynecologist to the Methodist Hospital, Philadelphia.

The methods of hysterectomy here illustrated are: (*a*) vaginal; (*b*) abdominal, by ligation with amputation of the cervix; (*c*) pan-hysterectomy by combining the vaginal and the abdominal routes. The indications illustrated are: first, epithelioma of cervix; second, bilateral destructive inflammation of tubes, with metritis; third, small, painful, bleeding fibroid. The cases narrated will illustrate ways in which the treatment of different conditions must be varied; in other words, the operation should suit the case, and the case should not be made to suit any special type of operation.

Case I: *Epithelioma of cervix; Vaginal hysterectomy; Recovery.*—Mrs. R. H., private patient, married, aged fifty-four; seven children, latest eleven years old; three miscarriages; menopause two and a half years ago at the age of fifty-one. The quantity of the monthly flow had gradually increased toward that time, the duration being from five to twenty-one days. After complete cessation for more than two years, a slight irritating bloody discharge without odor was noticed; also pelvic distress, but no sharp pain. No bladder symptoms. I saw her three months after the discharge began.

Examination: Perineum torn partly through sphincter; cervix torn on right side; no eversion, no cystic degeneration. Near the os a denuded area showed three small hard red nodules which bled readily on being touched. The posterior lip showed hardening and infiltration as from malignant disease; the os was slightly excavated, the walls of the canal

of an angry red color. A thin band of slightly hardened tissue extended out down and back from the angle of the tear on the left side, which may have been cicatricial after an old cellulitis following the laceration, and was apparently not the hard infiltration of malignant disease. The rectal and vaginal walls were otherwise normal. The uterus, of normal dimensions, was retroverted and freely movable. No secondary involvement could be anywhere demonstrated. Diagnosis, early epithelioma. Advice, vaginal hysterectomy.

After complete sterilization of the neighborhood under ether, the uterus was curetted, the diseased area burned with the Paquelin cautery, and iodoform gauze packed into the canal. The cervix being held by a tenaculum, Douglas's pouch was opened, and gauze attached to a ligature pushed in to keep back the intestine. The incision being carried right and left nearly to the vessels, a running catgut suture caught up the vaginal and peritoneal edges to control bleeding from small veins. The bladder being pushed off by the finger and knife-handle from the front of the uterus, the broad ligaments were tied off with silk and a blunt needle. The ovaries, tubes and uterus came away together, as shown in the specimen. As the omentum tended to slip into the vagina, two loose catgut sutures drew together the upper edges of that canal. Iodoform gauze in the vagina and a vulvar sterilized pad completed the dressing.

At the end of the operation the pulse was 86 and regular, though the patient had well marked mitral disease. The highest pulse during convalescence was 96, and, as seen by the chart exhibited, the highest temperature was 100.4°. The patient was throughout bright and more comfortable than would seem possible to one not familiar with the average rapid convalescence after hysterectomy by the vagina for cancer.

This case is presented as a type of those in which vaginal hysterectomy is chiefly indicated, in the writer's opinion. The operation is suitable in cases of cancer where the vagina is capacious, and where the uterus has not become greatly enlarged and can be readily drawn down. When the disease has advanced so as to invade the broad ligaments, when glands out of reach are involved, or when it is necessary to work through diseased tissue, I decline to do the operation, as I consider it harmful to the patient. In old virgins the small, tense and atrophied vagina adds greatly to the difficulty, so that the supra-pubic route may be better. For the ordinary pelvic abscess, having its origin in the tubes or ovaries, the operation of vaginal hysterectomy recently advocated by some operators does not appear to the writer to be the best for the future of the patient. The immediate mortality is doubtless low, but the vagina is, like the rectum, a poor place into which to establish an infected sinus if one ever hopes to have that sinus close permanently from the bottom. The well established principles of the surgery of the ages are not changed by a passing fashion.

CASE II: *Hysterectomy by the supra-pubic route, leaving the cervix; Double pyosalpinx, metritis, old pelvic peritonitis, morphine habit; Recovery.*—The method followed in this case —supra-pubic ligation, amputating and leaving the cervix—is that which is adopted as the method of choice in nearly all cases, *i. e.* for fibroid, septic inflammation, and all other indications except malignant disease in the cervix or endometrium. Leaving the cervix preserves better the normal anatomical disposition of the vaginal vault and pelvic floor; but when malignant disease is present, of course, no uterine tissue can be allowed to remain.

Mrs. I. P., twenty-six years old; hospital case, from a mountainous region. Father died of heart disease, an aunt of cancer. Patient never strong. Menses first at sixteen; quantity always great, every four weeks, lasting seven to nine days, with pain throughout. Had a fall on the ice at the age of fifteen, acute pelvic inflammation following and confining her to bed three weeks. Three children; three miscarriages. Present disabling symptoms date from last miscarriage, three months ago, when she had peritonitis, being in bed five weeks. Since then has bled freely at two periods, the last continuing a month, seven to eight wet napkins a day, with much pain in left side, and inability to walk from pain and soreness in lower abdomen. During this time the morphine habit was acquired, thirteen "powders" of unknown strength being taken daily. This fact, however, was concealed, as was also the free use of whiskey, until after the operation.

Examination showed a large, tender uterus, firmly adherent in retroversion; much general tenderness; double disease of appendages; exudate from pelvic peritonitis; perineum lacerated; free purulent discharge from endometrium.

Hysterectomy was done through an abdominal incision; both tubes and ovaries

were removed still attached to the body of the uterus, as seen in the specimen presented. All the organs were buried in adherent coils of intestine. After these were separated it was seen that the fimbriated ends of the tubes had become closed, the uterine ends presenting the hard, contorted, cordlike form found in infective salpingitis, the hardened and sacculated ampullar ends apparently containing pus. Although these tubes have been largely stripped of adhesions and unfolded, one may yet see how nature works to prevent the escape of tube contents into the peritoneal cavity. First the fimbriæ adhere and form a solid mass; they are closed in by a swelling of the outer wall of the tube extending over the end and gradually contracting at the orifice until the fimbriæ are buried and the end of the tube is smooth and bulblike. Meanwhile the contorted turns of the tube adhere, the outer end often being drawn underneath. This end will then lie buried in tube convolutions, broad ligament, adherent intestine, and exudate, one to two inches from the general peritoneal cavity. The uterine wall in this specimen is doubled in thickness from inflammation and subinvolution.

Hysterectomy was done because the uterus would always have remained sore, large, and displaced, a source of discomfort and discharge from endometritis.

The patient made an excellent recovery, the abdomen remaining flat or scaphoid, but the morphine habit gave trouble. As stated, this habit was not known, and in consequence no morphine was given after the operation, as it would otherwise have been, to maintain her normal state. The night after operation she demanded morphine, threatening to "get hysterics" if it were not given; being refused, she proceeded to get them, screaming like a wild animal almost incessantly for five hours, throwing herself about the bed, requiring restraint to keep her in it. She beat her head with a basin, and repeatedly went into a position of opisthotonos, with dilated pupils and other signs of hysteria. Meanwhile the pulse was greatly disturbed, though the temperature remained unchanged. Probably the integrity of ligatures was never so sorely tested after hysterectomy, but they stood the test. The patient having begged piteously for her hand-bag, it was examined and found to contain morphine and whiskey. She now confessed to the morphine habit, and was given a quarter of a grain hypodermically every four hours. There was no further trouble except a slight outbreak of hysteria on the following night. The morphine was gradually cut down, and stopped by the end of the third week. The patient herself, being free from all pain, requested its discontinuance some time before it was thought wise to entirely give it up.

This case furnishes one instance in which it was thought wise to remove the uterus in addition to the appendages. It is not the writer's custom to do this in every inflammatory case. He has had a number of cases of removal of both tubes and ovaries for destructive inflammation where the uterus was not seriously diseased; complete restoration to health has continued after several years. In cases, however, where the pelvic floor is relaxed, where the uterus is in consequence displaced, or where, especially in gonorrheal cases, there is marked inflammation of the uterine tissues or subinvolution, it seems wise to remove the uterus also; considering it as a muscular mass deprived of function, without subjective influence on the mind or character, useless after the destruction of the appendages by inflammation, and a source of distress from its displacement. It is customary to obtain permission from the patient to use the necessary judgment after the abdomen is opened, and this judgment is exercised in favor of leaving the uterus in place where the condition of the patient would make further procedure risky, or where the uterus itself is well supported, small, and comparatively healthy.

CASE III: *Pan-hysterectomy by the combined vaginal and abdominal routes for small, painful, bleeding fibroids; Recovery.*—Mrs. H., aged forty-eight; a private case from the interior of this State. One child nineteen years ago. Menses regular, one to three days, every five to six weeks, and not excessive up to ten months ago, when she began to bleed freely and continued to do so without any cessation for five months. Pain, which had previously been irregular, became constant at the same time, being most severe in the left side of the abdomen, and passing through both hips. Exacerbations of pain, apparently originating about the neck of the bladder, were of great severity, causing nausea and sweating. Vesical and rectal tenesmus was associated with these attacks. She had gradually acquired a morphine habit and was now taking one-fourth of a grain a day.

Examination showed a torn perineum, with relaxation of the vaginal walls, especially the posterior. The uterus was 4½ inches in length, retroverted into the hollow of the

sacrum, not adherent, and in the first stage of prolapse. A sessile fibroid knob, about one inch in diameter, sprang forward from the uterine wall, within the area of the bladder attachment, a little to the left of the median line. This knob consequently made pressure upon the bladder-wall. The ureteral catheter when introduced showed that the left ureter was displaced by this knob, passing upward and then outward over its base in the sulcus at the junction of the knob with the uterus. There was much tenderness at this point, and there seemed no doubt that traction upon the ureter was an element in the bladder distress. The problem was, to find the surest and safest way of curing the patient of her bleeding and pain, as well as of the bearing down and general pelvic distress due to the laceration, and consequent retroversion and descent of the uterus. Perineal repair alone would have failed to cure the retroversion and descent of a large, heavy uterus; to have suspended the uterus in addition would have solved the problem of uterine support, but would have involved opening the abdomen. Here was a woman aged forty-eight with a fibroid, small as it was, causing five months' constant bleeding, the pain driving her to morphine. Experience has shown that the menopause gives very uncertain relief in such cases, even after it comes. Electricity checks bleeding but temporarily. It was decided that, since operation was necessary in any event to cure the tear and displacement, to do less than a hysterectomy would be unjustifiable temporizing; the prospect of cure offsetting the slightly increased risk. Indeed, the patient herself preferred death to a continuance of her suffering.

The operation of total hysterectomy from above in a patient as stout as was this one is often a matter of some difficulty when the region of the cervix is reached. Consequently the removal was begun by the usual early steps of a vaginal hysterectomy. The uterus did not come down well, and, owing to the peculiar relations of the ureter above the fibroid nodule, the operation was completed from above through an abdominal incision, by ligating off the broad ligaments and dissecting down the bladder in front. As shown in the specimen presented, the ovaries, tubes and uterus were removed entire. Gauze was passed into the vagina from above, and the peritoneum closed over it and over the broad-ligament stumps, the abdominal wound being closed without drainage.

During the after-treatment the patient's accustomed quantity of morphine was daily given until convalescence was well established, when it was gradually diminished and finally stopped. This is a most important point in the management of operations on opium *habitués*. The drug must on no account be withdrawn at the time of operation, but enough must be given to keep the system at its normal level. Even then they are dangerous subjects for major operations. Surgically the recovery was uneventful, the highest temperature being the absorption rise to 100.4° on the second day, as shown by the accompanying chart. The wounds were absolutely aseptic and healed primarily. She returned to her home free from pain, and taking no morphine. She will, of course, have no more bleeding.

As in all opium cases, the mental condition required careful management, hyoscine and potassium bromide being the drugs relied upon to secure quiet. Such patients require careful nursing, being subject to hallucinations, very crafty and untrustworthy, and liable to get out of bed.

Total hysterectomy by a combined vaginal and supra pubic method is seldom called for, but it may be done where, as in this instance, the patient is quite fat, and where neither the vaginal nor the abdominal route alone gives proper access to the parts.

3727 CHESTNUT STREET.

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*SOME NOTES ON AN EPIDEMIC OF CHICKEN-POX IN THE ORTHOPEDIC WARD OF THE HOSPITAL OF THE UNIVERSITY OF PENNSYLVANIA, SERVICE OF PROF. DE FOREST WILLARD.**

BY JAMES J. WALSH, A.M., M.D.

Chicken-pox is usually said to be a trivial disease, gaining any importance it has medically from its superficial resemblance to smallpox. Observation of a series of cases among the children in the Orthopedic ward showed that in patients with lowered vitality (many of the cases were being treated for tuberculous arthritis) it was not so trivial an affection as the text-books indicate. Most of the clinical data usually given for the differential diagnosis of the disease from smallpox proved

* These notes form an appendix to "Some Notes on Practical Orthopedics," to which was awarded the Orthopedic prize at the University of Pennsylvania Commencement, June, 1895. The writer has to thank Prof. De Forest Willard for permission to publish them.

in these severer cases to be absolutely at fault. This forms at once the reason and the excuse for calling attention to them.

The first case that occurred was in a little girl of six, a delicate child with tuberculous history on the paternal side and a personal story of recurrent phlyctenular conjunctivitis, who was being treated for anchylosed hip and knee, due to tuberculous arthritis. The attack looked for a time very like smallpox. The temperature, after but slight prodromal symptoms, rose rapidly to 104°. This called attention to her, and an examination disclosed a number of distinctly shot-like papules, with an occasional vesicle, on her breast and back. The infiltration of the corium that gives this shot-like feel is said not to occur in chicken-pox. In fact, it is said that these "shot-like papules" are pathognomonic of smallpox. Whittaker* says that neither macules or papules are to be found at all in varicella.

In at least one of the cases, macules were noted at the very beginning of the indisposition, and in two other cases papules were noted. It seems probable that macules and papules, in severer cases at least, would be nearly always found to precede the vesicles if attention were called to the case early enough. The lesions run such a rapid course, however, through their various stages, with the highest temperature occurring usually at the time of vesiculation or a little after, that in private practice the preliminary stages can be seldom seen.

The vesicles in this case were many of them large and surrounded by a distinct inflammatory areola, though this is given as one of the differential diagnostic marks of smallpox by nearly all the authorities. Three other cases also had these infiltrated areolæ.

The American Text-book of Children's Diseases says that in chicken-pox "the vesicles never are umbilicated or partitioned, and never become pustules." In two of the cases there was distinct umbilication, and an attempt to evacuate the vesicles with a sterile needle revealed the existence of partitions from the failure to empty after puncture. In both of these cases pustulation of nearly all the vesicles occurred. This may have been due, to a certain extent, to picking at them by the children, as Dr. Nevins Hyde† suggests, but in both these cases pustulation was so general that it seemed rather a stage of the disease.

In these cases there was even noted a secondary rise of temperature, a little above 100° and lasting but twenty-four hours. This might be expected, for the secondary fever in smallpox is not due directly to the infection itself, but to the absorption of toxins from the multiple minute abscesses that exist after the pustular stage is reached. In cases of varicella like those under consideration the pustulation of the vesicles produces a very similar condition, and a corresponding rise of temperature would usually result.

The formation of pus leads almost necessarily to some destruction of tissue. The papillæ of the corium suffer just as in smallpox, and the result is the whitish, somewhat pearly, depressed cicatrix that is not unlike the "pock mark." Several of the cases showed these after convalescence, two of them presenting not a few on shoulders, chest, and abdomen. Of these cicatrices Osler* says: "After chicken-pox they are not so very uncommon. They are in my experience more common than after varioloid."

In one of our cases the lesions were plentiful on the face, which is unusual; and besides were distinctly confluent, which is more unusual. Of this case Professor Willard said that had it really been a case of smallpox it would have been a very serious one. At no time, however, did the child suffer from much constitutional disturbance, as would have been the case in the graver disease, but, with a temperature above 102°, played with toys and pictures on the bed and joked with the other children in the ward. This was true in all the cases except for a few hours at the very height of the fever.

Whittaker† says that the disease is exclusively confined to children under twelve, but a girl of fifteen in the ward with the others also developed the disease, and not in a very mild form. Dr. Willard stated that at sixteen he had himself suffered from a severe attack.

To look back on it, one might hesitate—so many points of external similarity were there to smallpox—as to our having been deceived in the disease, as Hebra is said to have been in the famous case which has led the Vienna school into holding against the rest of the medical world the essential identity of the two diseases varicella and variola. We had, however, some of the typical milder cases with scarcely any fever, slight indisposition,

* Pepper's Text-book of Medicine, art. "Varicella."
† Pepper's System of Medicine, art. "Varicella."

* Practice.
† *Loc cit.*

and a few clear vesicles, looking as if "scalding water had been flirted over the surface," with serous contents so translucent that it was easy to see the reason for the Italian name *cristalli*, "crystals."

To review for a moment: The usual external signs given as differentially diagnostic between smallpox and chicken-pox seem to be valueless. It is only the severer cases of chicken-pox that lead one to hesitate, and in these there may be high fever (104°), a macular and papular rash, the papules having a shot-like feel; the vesicles may be surrounded by an inflammatory areola, may be confluent, be umbilicated and partitioned, later they may become pustules with the production of some secondary fever, and finally may leave permanent depressed cicatrices not unlike "pock marks." The disease may even attack young people of fifteen or older, so that age alone does not exclude the milder affection.

The really diagnostic signs of chicken-pox that can be depended on are: the absence of any serious constitutional disturbance—even with high fever the patient is very little indisposed, and not for any length of time; the absence of prodromal symptoms such as pains in the back, though even these may occur in milder form; the existence of cutaneous lesions in a particular part of the body in different stages at the same time, papules, vesicles and pustules being found together; the more rapid course, so that, instead of taking three days, papules take but twenty-four hours to become vesicles, and about the same length of time to pass from the vesicular into the pustular form; and finally, the location of the rash, chicken-pox seldom or never appearing first on the fingers and wrists, though it may be localized on the face alone (as in one of our cases), while smallpox usually appears first on the forehead, the wrists, and the fingers.

As to *treatment*, the text-books generally seem to consider the disease as so trivial as not to require treatment. To say this is to invite neglect of it and pave the way for complications and sequelæ. Despite the assertion in the Text-book of Children's Diseases that "it has neither complications nor sequelæ," it is liable to both. One of our cases, the worst, developed hemorrhagic lesions—of but limited extent, however—on the legs; and in tuberculous children not a few cases of gangrenous varicella have been reported. A number of our cases remained weak and anemic for a considerable time after convalescence had been thoroughly established, though systematic stimulation and tonic treatment were instituted immediately after complete defervescence.

Then any disease in which the fever almost normally rises to 103°, and sometimes goes even higher, must not be neglected. Increased metabolism at this temperature causes much greater tissue waste than usual, and sends to the kidneys for excretion a much larger amount of effete material. If the overworked kidneys are under such circumstances called upon in addition to excrete the infectious material of that undoubted but as yet unexplained form of infection "a cold," their lowered vitality will fail to protect them, and a nephritis will result. A number of cases of nephritis after varicella have been reported, and doubtless some of the cases of Bright's disease that develop in later life without any immediate cause and without scarlatina in their histories have a neglected attack of chicken-pox as one of their etiological factors.

A child will require almost as much care and treatment in many cases of chicken-pox as in any other of the infectious diseases of childhood. Antipyretic treatment will sometimes be needed, and the fever should always be watched carefully and at least the ordinary fever mixtures prescribed. Kidney secretion should be stimulated, and nephritis carefully guarded against. The effervescent solution of citrate of magnesia is readily taken by children, acts kindly on the kidneys, bowels, and skin, and is an excellent febrifuge.

As to the eruption, it seems too bad to allow any more disfigurement to follow than is absolutely unavoidable; usually there are some lesions on the face, and nearly always on the neck and shoulders, and in female children especially it is important to limit the cicatrices as much as possible.

Two indications are to be met here: limit the action of the pyogenic micro-organisms, and alleviate the itching to keep the child from further infecting the lesions by scratching. Carbolic acid will meet both indications—used either, as Whittaker suggests, by touching each of the vesicles with a solution of equal parts of glycerin and carbolic acid, or, what seems perhaps better, the frequent use of a wash containing five per cent. of carbolic acid, or the application, where possible, of lint soaked in this solution over the lesions when pustulation begins.

When the crusts over the lesions have formed, the application of five-per-cent. car-

bolized vaselin will probably aid in preventing further dissemination of the infection; for while it has not been absolutely proven as yet that the infectious material is present in the cutaneous lesions, it is at least extremely probable, from analogy with the other infectious fevers, that it is.

As a matter of prophylaxis, even older children, up to sixteen or seventeen years of age, who have not had the disease, should not be allowed to associate with those affected.

A CASE OF CORROSIVE-SUBLIMATE POISONING DURING LABOR.

By Henry L. Williams, M.D.,
Service of Dr. B. C. Hirst, Howard Hospital, Philadelphia.

On January 12 of this year, Mrs. W., a healthy, robust primipara, twenty-eight years of age, was received into one of the rooms of the Howard Hospital as a private patient of Dr. B. C. Hirst, to await her confinement. From data furnished by the patient it was estimated that delivery was due on January 10.

On the 25th of the month, as no signs of beginning labor were apparent, and the child was already two weeks over-due, it was decided to induce labor. A flexible French bougie was accordingly introduced into the uterus, and a large wool tampon placed in the vagina soon after noon.

The first labor pains began at about 6 o'clock in the evening, and an examination showed the child presenting R. O. P. with all the conditions entirely normal.

Later in the evening Dr. Hirst was summoned to attend an important complicated labor outside the hospital, and the conduct of the case was left in charge of the writer, his resident physician.

Severe active pains began soon after midnight, and at 1 o'clock the os was fully dilated, though the head had not yet engaged.

In addition to the resident and special nurse in charge of the case, the mother of the patient was also allowed to be present in the room and ministered to her daughter's minor wants, giving her drinks of water from time to time.

Toward 3 o'clock in the morning the child's head had become fully engaged and had begun the descent of the pelvic canal.

The patient repeatedly called for a drink, and, as the water in the pitcher was somewhat warm, it was suggested to the nurse to bring a bottle of Apollinaris from the refrigerator, which stood just out in the hallway. At the same time a bowl of fresh bichloride solution was called for, and the nurse left the room. After a few moments the nurse returned, bringing a bottle of bichloride, and then again left the room. The mother was sitting at the head of the bed, while I was reclining upon a lounge by the window, during one of the intervals between the pains. I was soon slightly aroused by a movement of the mother, and took notice that she was raising her daughter's head in the act of giving her a drink. I thought nothing of this; saw the woman take the glass and begin to drink. This, however, instantly stopped, and the patient spat out and gagged violently. Getting up immediately and going to the bed, the first thing noticed was a bottle of the strong solution of bichloride of mercury, of which one teaspoonful to a pint of water made a solution 1 to 1000, standing upon the washstand with the cork out. The bottle was plainly labeled in red letters three-quarters of an inch high, "Poison!" Scarcely thinking it possible, I asked the mother if she had given her daughter anything out of the bottle. Her reply, as she pointed to the corrosive sublimate, "Why, yes, I gave her a drink of Apollinaris," revealed the entire situation. The patient had been given a solution to drink, each fluidrachm of which contained 7½ grains of the corrosive chloride of mercury.

Almost at once the woman vomited, evacuating more than a pint of liquid. Undoubtedly, but for the fact that the stomach was well filled with fluid at the time, and its contents almost immediately emptied, nothing could have saved her life.

According to the patient's statement, she had taken two rapid swallows before she perceived that what she was drinking was not the proper thing. In order to arrive at as near an estimate as possible of the amount actually taken, several of the hospital nurses have since been asked to drink two swallows of water in a natural manner, and the amount has then been carefully measured. It was found that slightly more than a fluidounce was invariably taken at each swallow. Admitting, as the patient said, that two swallows had been taken, this would mean two ounces of the solution, and as each fluidrachm contained 7½ grains, the entire amount taken would be represented approximately by 120 grains of bichloride.

The nurse was instantly despatched for eggs, and within three minutes from the time

when the liquid had been swallowed, the patient had been made to take the whites of a half-dozen of them. There was again nausea, and after a few moments the eggs were evacuated with considerable white coagulum. The stomach was next washed out with a gallon of warm sterile water by the siphon-tube, and during the twenty minutes following the woman was induced to drink the whites of a dozen more eggs.

During this period there was more or less continuous nausea. A hypodermic of twenty minims of digitalis and one-twentieth of a grain of strychnine was also given. At this time the pulse was counted, and found to be 148 to the minute and rather weak. The extremities were cold and damp, so hot bottles were applied.

For the first ten minutes after taking the solution, powerful intermittent uterine contractions continued without interruption. Pains then gradually lessened, and for half an hour ceased entirely. A vaginal examination soon after showed the head of the child not quite upon the pelvic floor.

At the end of half an hour, pains began gradually to be renewed, and from this time until delivery shortly after 8 o'clock in the morning, there was constant, though extremely slow, progress.

As the child's head emerged from the vulva, the cord was seen to be tightly drawn about the neck and to pass under the axilla, where it was constricted. The child was immediately extracted, but all efforts to overcome the asphyxia were unavailing.

Had the forceps been used several hours earlier, it is possible that the child's life might have been saved; but as the woman was a primipara, and as there was constant progress, except during the half-hour when all pains ceased, and nothing to indicate the condition — for no fetal heart-sounds had been heard at any time—there seemed no sufficient reason to interfere with the process of nature.

It is unlikely that the bichloride had any effect on the child, except as it interfered with the process of labor.

During the morning all symptoms of sublimate poisoning passed away. The patient complained of a very sore throat, and of difficulty in swallowing, but there were no gastro-intestinal symptoms or further complications. Rather extensive ulcers were formed on the tonsils and uvula, and the entire pharynx was greatly inflamed for about a week. At the end of this period the inflammation subsided, and gradually all traces of the trouble disappeared.

A note received from the patient in May stated that she had experienced no further symptoms or discomfort after leaving the hospital.

For a week following the accident, the patient was given three-grain powders of bismuth subnitrate every two hours during the day, and the throat was sprayed frequently with Seiler's solution.

Soft diet was kept up for two weeks, and at the end of this time all treatment discontinued.

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*THE DANGER OF TUBERCULAR INFECTION FROM COW'S MILK, AND ITS PREVENTION.**

By B. H. Detwiler, M.D.,
Williamsport, Pa.

"In 1782 the City of Naples enforced sanitary laws with the intention of stamping out tuberculosis. They required the registration of all consumptives, also inventories of clothing, some of which was destroyed, with disinfection and replastering of houses." These methods were based on empirical grounds, yet in the next half-century tuberculosis was reduced fully fifty per cent. One hundred years later Robert Koch presented a complete demonstration of the cause of this dread disease: he demonstrated that a particular bacterium, the *Bacillus tuberculosis*, was the cause, and that the sputa of consumptives gave rise to more than fifty per cent. of the cases.

Many of you will recall the case of Mr. E., who had his shop on West Fourth street, a quarter of a century ago. He was a hale, sound man, but had in his employ the Robinson brothers, who worked in a small closed room and expectorated around the stove. Mr. E. justly claimed that his subsequent infection with tuberculosis was due to that cause, which is now accepted.

It is only within recent years that the profession has come to regard milk as an important item in the etiology of this disease. Sternberg says: "A more common mode of infection, especially in children, is probably by way of intestinal glands from ingestion of milk of tuberculous cows." Infection from this source has been proved, and the bacilli found in the milk by such careful experimenters as Bollinger in Germany, and Dr.

*Read before the Lycoming County Medical Society, July 7, 1806.

Ernst in Boston. This revelation of bacilli of tuberculosis in the milk of cows is of recent date. Formerly, when the disease was considered purely hereditary, it was a visitation of God. Now, since we can demonstrate that one source of danger is in tuberculous cows, it is self-evident that this source of contagion should be stamped out by destroying those cows that the tuberculin test shows are contaminated.

Dr. Shakspeare, of Philadelphia, states that "Fully one-fifth of all the deaths of infants and children feeding on ordinary milk are due to tuberculosis, commencing in some part of the digestive tract." This may be a high percentage. Dr. Hamaker, of Meadville, Pa., states that since the tuberculous cows have been eliminated from the herds supplying that city with milk, there is less disturbance of digestion of the children than formerly; with a population of 12,000 last season there were only two deaths from cholera infantum. The question will present itself: If milk from cows is dangerous, how is it that we have used it with impunity for years? The reply will be that it may not have been so innocuous as we have imagined. Only the sputum of consumptives reproduces this disease, and the milk of consumptive cows is dangerous only when the udder becomes involved, but one diseased cow will infect a whole herd. While tuberculosis is infectious, it is only mildly so. It is not like measles or whooping-cough, yet it is infectious.

In the wards at the Hospital for Insane at Danville, Pa., all tuberculous inmates are kept together, and there have been only a few deaths from tuberculosis in that institution in comparison with institutions where it is not considered infectious.

Formerly California was the only hope of consumptives. Its equable climate and freedom from bacillary infection made it for years the Mecca for this class of sufferers. The same results were secured at Denver and El Paso; but this same dry climate and the high winds disseminated the bacillus of tuberculosis expectorated by the consumptive upon the street and wherever convenient, until there is now as great mortality there as at other places.

The plan that appears to me most feasible in the light of our present knowledge is, to destroy all tuberculous cows and instruct all tuberculous people that they must not expectorate on the streets or cars or in any place where the sputa may be incorporated in the floating dust by evaporation and inhaled.

The two points of most frequent accidental invasion are the lungs and throat. Those who have diseased tonsils should have them removed—a painless operation. The inflamed crypts of the tonsils afford a nidus for arrest and propagation of the bacilli, and the inhalation of these bacilli into lungs debilitated by heredity may be similarly dangerous; or an acute bronchitis in infancy or youth may produce a bronchial engorgement that will afford an excellent point of invasion for these micro-organisms or spores; and when this invasion is established, the end is at hand. I desire to submit communications from Drs. McLain and Hamaker which present exhaustively the method of exterminating bovine tuberculosis. Dr. McLain writes:

In reply to your communication asking my opinion as to the use of tuberculin as a means of diagnosis, and its results, and the method of dairy and milk inspection of our City Board of Health, would say after a thorough test and from a large experience I am satisfied that the judicious use of tuberculin is the best and surest method to eradicate tuberculosis from the bovine race, providing the same methods for extinction could be adopted in the human race, but so long as we have tuberculosis in one family, just so long will we have it in the other. The percentage in cattle will be greatly decreased, but we must have more legislation and aid from cattle-breeders to enable the veterinarian to accomplish what the profession could do under more favorable circumstances. I think there has been needless destruction of valuable breeding animals in which the tubercular lesion was encysted and practically without danger. I have seen cases where the process of calcification had occurred, but the pathological changes and the different organs invaded by the bacilli render them so dangerous to have about, that it is better to destroy a few that are not dangerous than to allow one to escape. I have never had any serious results following the use of tuberculin. I think the greatest danger of infection is when there are tubercular deposits in the udder. In regard to the method of dairy and milk inspection of our Board of Health: It is a plan suggested by myself that every vendor must have a license, and, in order to obtain the same, must make application to the milk-inspector for a certificate of inspection. This inspection consists of an examination of all cattle, food, water, and dairy utensils. There must be a separate milk house, independent of dwelling, or stable, and nothing but clean cattle are allowed to be milked. The milk is tested from time to time, to see that it is kept up to standard—3½ per cent. butter fats, 12½ per cent. solids. I send you this day rules and regulations of our Board. Please look over the milk rules, etc. Yours, etc.,

C. COURTNEY MCLEAN.

Meadville, Pa., June 29, 1896.

MEADVILLE, Pa., June 29, 1896.

DR. B. H. DETWILER, *Williamsport, Pa.:*

DEAR DOCTOR: Complying with your request, I wish to say that we have had quite an energetic health board in Meadville, who have tried to bring the health department of our city up to modern standard. They have paid especial attention to the purity of the milk supplied to our people, requiring all milkmen and small dealers to register their cows or herds with the health department,

and an inspection made by our milk-inspector, who is a very competent veterinarian.

During the past few years this officer has discovered quite a number of tubercular cattle and caused them to be killed. He uses tuberculin in diagnosing his cases, but has not yet used the test on all the cows, but simply on those which have shown some symptoms of the disease.

The milk-inspector also requires the milkmen to have clean, well ventilated stables for their cattle, and also requires that the milk be properly cared for over night.

A couple of years ago our milkmen began to use a milk-preservative, which they put in the milk to keep it from spoiling, in order that they might discontinue the delivery of milk twice a day. The health board compelled the discontinuance of this practice, which was very injurious, especially to small children.

Personally, I am in favor of any means by which tuberculosis can be stamped out of the herds. I recall reading a very interesting case two or three years ago that occurred in Colonel Beecher's family. An infant son died of tubercular meningitis. The herd of three cows showed no evidence of tuberculosis, but on the physician's insisting that tuberculin be tried, two cows were found tubercular, as was proved by the post-mortem.

With kind regards, I am,

Yours truly,

W. D. HAMAKER.

A recent *Lancet* editorial presents the case as follows:

"TUBERCULOSIS OF THE BONES, MUSCLES, AND EYES OF CATTLE.

"In the inspection of the carcasses of animals destined for the food of mankind, something more is necessary for the detection of tuberculosis than a cursory examination of the lungs and lymph glands, as the lesions are sometimes observed in the hard tissues and muscles, which are not usually cut into for investigation. In a German periodical devoted to the hygiene of flesh and milk the remark is made as to the comparative infrequency of tubercles in the flesh of cattle, and especially in the myocardium. In the latter situation only one instance had been observed until recently; this was in a cow which had very extensive tuberculosis of the pleura, and in the wall of the right ventricle there was a tuberculous mass as large as a bean. Not long ago at the Leipzig abattoir a calf six weeks old and in good condition was slaughtered, and on dressing the carcass it was found to be affected with generalized tuberculosis — the lungs, pleura, and lymphatic glands of the neck, chest, and abdomen, as well as the liver, spleen, kidneys, etc., being involved. On the right side of the heart, near the surface, and only separated from each other by a thin muscular partition, were two masses of tubercle, each as large as a hazelnut. One was imbedded in the wall at the left ventricle, near the auriculo-ventricular groove, and the other at the apex of the organ, on the middle of its anterior surface. Another veterinary abattoir inspector had some time before discovered a case in which there was tuberculosis of the sternum, the elbow-joint, and the pectoral muscles. More recently he has met with another instance of muscular tuberculosis, which was apparently not primary, but consecutive to tuberculosis of the cartilage of the seventh rib. The latter was completely destroyed at certain points, the remaining portions containing yellow, rounded, cup-shaped nodules, which when removed left circular cavities that neither in color nor appearance could be distinguished from normal cartilage. Around the diseased cartilage there were seven small abscesses, one of which was open; the pus in these contained the tubercle bacillus. The cow was the subject of thoracic and abdominal tuberculosis. There are a number of cases of ocular tuberculosis in the ox recorded in veterinary literature, and among the latest are two described by Herr Winter of Bromberg. The first case was that of a four-year-old Dutch cow, which was so stupid or stupefied as to be insensible to the voice and to blows. At its necropsy generalized tuberculosis was noted, the pleura, lungs, peritoneum, lymphatic glands, liver, kidneys, ovaries, and udder, as well as the brain and its coverings, being diseased. The cornea of the right eye was opaque, bluish-gray in some places and bluish-black in others. Near the internal angle there was a prominent mass formed of lenticular tubercles, and the sclerotic also showed pyriform and lenticular projections that appeared to come from the interior of the eye. At the junction of the cornea with the sclerotic there was another mass of the diameter of a 50-centime piece. The interior of the ocular globe was fully occupied by a caseous mass, bright yellow in color, semi-fluid, and containing calcareous particles. At the papilla of the optic nerve the retina was separated from its deeper layer by cheesy tubercles; the prominences seen on the outside of the sclerotic were found to be situated between that and the choroid coat, and were calcified in some places and puriform in others. The crystalline lens could not be recognized, and the iris was confounded with the cornea. By the aid of the microscope, tubercle bacilli were found everywhere. The other case was that of an emaciated cow also affected with generalized tuberculosis. The right cornea was turbid and of a dark-blue tint; at the margin of the sclerotic there were

several yellowish tubercles each about the size of a lentil; the vitreous humor was muddy and opaque, but the retina and crystalline lens were normal. The posterior surface of the iris was partially adherent to the lens by a thin white layer, and on its anterior surface there were nodules which could be seen through the cornea, with yellow miliary tubercles grouped in tufts or in grape-like masses at its lower border where it joined the cornea. In all these neo-formations the tubercle bacilli abounded."

The statements of Drs. Hamaker and McLain, who are specialists in this line of work, are of great value, and the fact that with the better and carefully prepared milk in a city of 12,000 people there should be only two deaths from cholera infantum speaks louder than words.

Dr. Ernst, the bacteriologist of Harvard, who prepared an exhaustive report for the Massachusetts Society for Promoting Agriculture, in 1894, states:

"The desire of the committee was to determine whether or not the milk derived from tuberculous cows might contain the infectious material of the disease, and in this way become dangerous when used as an article of food, and this question was of necessity to be divided into two parts: first, whether this infection of the milk existed in cases in which there was actual tuberculous disease of the udder; and second, whether it might exist in cases in which the udder was apparently or actually healthy, the disease existing in other parts of the body. In regard to the first part of the question, plain common sense showed that the danger of infection was a real one, and besides there existed at the time sufficient experimental data to prove the fact, so that there was very little dispute that under such circumstances milk should not be used for food, certainly not in an uncooked condition." Evidence since then in the same direction has constantly accumulated, and now there are few to challenge the opinion that milk from cows with tuberculous udders should be condemned as food. Upon the second point, however, as to whether the milk from cows with tuberculosis, but not of the udder, might be dangerous, there was a great diversity of opinion, and almost no experimental evidence upon which to base what opinion there was. Work was prosecuted under the following headings: first, a careful and persistent microscopic examination of the milk from such cattle; second, inoculation experiments with such milk; third, experiments in feeding with the same milk. "After two years of continuous and methodical examinations of milk from cattle at the experimental farm at Mattapan, of the Bacteriological Laboratory of Harvard, the following conclusions were reached, thirty-six cows having been examined and 121 examinations of milk and cream made. Each examination was made from the bottom and top fluid. In every case at least a dozen cover-glasses were used for each examination, and fifteen minutes' time was spent over each cover-glass. The staining employed was invariably 'Koch-Ehrlich, 24-hour method.' The bacilli of tuberculosis were found in one or more of the cover-glasses upon nineteen different occasions. These nineteen positive results were obtained from twelve different animals, and were found in about equal proportion in the milk and cream. The bacilli were actually seen in the milk of one-third of the animals. These conclusions were confirmed in twenty out of thirty-six animals by careful post-mortem examination. The inoculation experiments were made upon guinea-pigs and rabbits. In six weeks eighty-eight guinea-pigs were inoculated with milk and cream from fifteen different cows, twelve of which were tuberculous. Of ninety rabbits inoculated, six exhibited tuberculosis. Forty-eight rabbits were fed from thirty to ninety days with milk of tuberculous cows with healthy udders; two were infected with tuberculosis. After being similarly treated, twelve healthy pigs showed fifty per cent. of tuberculosis; and of twenty-one calves, eight, or over thirty-three per cent., showed tuberculosis. In twenty-three cows of the twenty-five used for experimental purposes, not one had any tuberculosis of the udder. One had one giant cell with one bacillus. In all there were evidences of tuberculosis in other parts of the body. Of these cows, nineteen had calves, which were killed when six days old without any evidence of tuberculosis, showing absence of hereditary infection."

The summary of the reports states that in the practice of thirty-nine veterinarians, representing nineteen States, for one year, there were 549 cases of tuberculosis, with 242 suspicious cases—total, 791. Among 165 herds, containing about 3000 animals, eighteen per cent. were diseased and over eight per cent. suspicious—total, twenty-six per cent.

The following conclusions are drawn:

"1. While the transmission of tuberculosis

by milk is probably not the most important means by which the disease is propagated, it is something to be guarded against most carefully.

"2. The possibility of milk from tuberculous udders containing the infectious elements is undeniable.

"3. With the evidence here presented, it is equally undeniable that milk from diseased cows with no appreciable lesion of the udder may, and not infrequently does, contain the bacillus of the disease.

"4. Therefore, all such milk should be condemned as food."

These deductions are legitimate, and should (with the evidence of disease as represented by this article) lead us to examine with great care all milk products; and it should be the duty of the health officer to see that no milk is offered in this city that has not its proportion of butter fat and solids and that is not free from all agents that tend to prevent fermentation, and that the herds are free from tuberculosis and are properly fed and protected from the inclement weather, with abundance of sunlight and air. Further, a county veterinarian should be appointed by the City Board of Health, with proper salary, whose duty should be to visit each herd in the county twice a year or oftener, and test each cow with tuberculin when in his opinion it is necessary after the first initial test. This protection of milk-supervision should extend to neighboring counties, from whence our milk-supply is largely secured, and at the expense of the producers.

With these protective measures carried out in the spirit of the law, and with proper influence exerted upon our law-makers that legislation be made for the protection of farmers and dairymen by properly remunerating them for the loss of their fine cattle (which are peculiarly liable) and assisting all who will be pecuniary sufferers in stamping out this branch of this dread disease, in time consumption will be classed with the effete diseases, like smallpox and diphtheria.

FECAL IMPACTION IN THE ANO-RECTAL SPACE.

MANLEY (*Medical Brief*) concludes an article on this subject as follows:

To summarize, it may be stated:

1. In all cases of rectal inertia, resulting either from a low grade of inflammation or ulceration occupying any site of the large bowel, tubercular, specific, or malignant, attended with persistent constipation, the perfunctory administration of an enema or cathartic is inadequate, and nothing less than a painstaking physical examination will reveal the real condition.

2. In many males past middle life, in whom we have reason to suspect inhibition of the sensory reflexes of the rectum from local lesion in the neural periphery or in the spinal or central ganglia, particularly when vesical symptoms are present, with obstructed or forced urination, before directing any special therapy to the genito-urinary organs we should be entirely assured by a digital examination that there are no fecal concretions lodged in the lower rectum.

3. A relaxed, partially prolapsed uterus may roll over and interfere with complete defecation, giving rise to symptoms of fecal obstruction; and *per contra*, a rectal bag of hard, dehydrated or calcified fecal mass may, in turn, give rise to nearly every symptom of ovarian, tubular, or uterine disease. A thorough exploration of the rectum as a primary measure is of prime importance in all such cases.

OSTEOPLASTIC RESECTION OF THE TARSUS.

NEGRETTO (*Gaz. degli Osped.*, No. 8, 1896) describes a new operation applicable in cases where the disease is confined to the posterior part of the foot, and where it is desired to save as much of the foot as possible. The operations of Vladimirow and Mikulicz for this purpose result in the foot being fixed in a position of talipes equinus. The author's operation allows the patient to walk on the sole of the foot, which is fixed at right-angles to the leg. This result is brought about by resecting portions of bone from the tibia and fibula and from the dorsal face of the navicular, cuboid, and second and third cuneiform bones, the two surfaces (after previous removal of the diseased os calcis and astragalus) being then united together. The foot is necessarily shortened by this method, but the author claims that less mutilation occurs, tenotomy of the flexor tendons of the sole of the foot is unnecessary, the operation is shorter and more conservative, and, above all, the foot is so placed that, instead of walking on the toes, as after Mikulicz's operation, the patient is able to use the sole of the foot as before. In the single case in which the author has put his method into practice the results were decidedly satisfactory.—*British Medical Journal*, April 4, 1896.

The Therapeutic Gazette

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Leading Articles.

THE TREATMENT OF PNEUMONIA IN CHILDREN.

In the Progress columns of this issue of the GAZETTE will be found an excellent summary of the various methods employed in the treatment of this disease in childhood in Philadelphia, Washington, New York, and Boston. It may not be amiss for us to point out in addition the methods which we have found to be useful under such circumstances. The hygienic surroundings of the child and the temperature of the air of the room, as well as the question of feeding, need not be considered in this editorial.

There can be no doubt that in many cases of croupous pneumonia in childhood the tendency of the disease from the beginning to the end is to run a practically harmless course which almost invariably ends in cure, so that the child only needs medication when symptoms of sufficient importance arise to require relief. A little stimulation at times when the heart seems somewhat feeble and the nervous system is depressed, and a careful and continuous use of concentrated and easily digested food, are all the measures which have to be resorted to in the average case.

Catarrhal pneumonia, being a much more frequent disease in children, and one which possesses a far greater mortality—in part due to the fact that it generally complicates some other malady—usually requires much more interference on the part of the medical attendant.

The fever, which in both these diseases may become excessive, is best relieved, in our opinion, by the use of cool drinks and by tepid or cool sponging; but the actual bath treatment of the fever we have never known to be required and would regard as being too dangerous and too severe for this class of patients. Neither do we think the employment of cardiac or nervous sedatives is very advisable in this class of patients, unless signs of marked nervous excitement are present, when pure nervous sedatives such as the bromides are much to be preferred to those drugs (such as aconite and its relations) which not only quiet the nervous system but also depress the circulation. In these children, who, as we have already said, are generally somewhat exhausted by an earlier illness, alcohol has seemed to us to be by far the best stimulant, in the form of good brandy in the dose of from ten drops to a teaspoonful, according to the age of the child and the response made by the circulatory system to the stimulant. We believe the brandy should always be given diluted with water, and, if the child is old enough, mixed with a little finely cracked ice, as in this way the fever is reduced and the child does not spurn its food, fearing that its taste has been spoiled by the introduction of the brandy which to it is a disagreeable medicine. Four-hour intervals should usually elapse between the doses of brandy, although if active stimulation is required the liquor may be given every two hours for the first twenty-four or forty-eight hours of the disease. Simultaneously with the use of brandy by the mouth we believe that in both forms of pneumonia the employment of quinine by the rectum is of the greatest value, and we give by preference either the hydrobromate or the hydrochlorate of quinine in the form of a suppository; this medication should not be repeated more frequently than three times in the twenty-four hours, and two, three or four grains of quinine may be placed in each suppository. The more frequent use of suppositories is liable to produce rectal irritation and expulsion of

the suppository before sufficient time has elapsed for the absorption of the drug.

In regard to the use of cotton or woolen jackets or of poultices in cases of either croupous or catarrhal pneumonia in childhood, we can state that we have never been able to see that they were of any advantage; on the contrary they have aided in maintaining a febrile temperature by interfering with the dissipation of heat from the child's body, and have increased its nervous irritability by making it uncomfortable. Indeed, in some instances, the profuse sweating thus induced has, we believe, weakened the child and increased its susceptibility to cold. Should there be much irritable cough which disturbs the patient's rest, small quantities of bromide of sodium, rather than bromide of potassium, are employed, and the bronchitis tent is resorted to, or at least steam from a kettle of boiling water is allowed to permeate the air of the room. Should any tendency to collapse come on, we believe that belladonna or atropine should be given by hypodermic injection, or by the mouth, according to the severity of the symptoms.

In conclusion we wish to emphasize a point already referred to, namely, the absolute necessity of maintaining from the beginning to the end of the attack a definite plan by which nourishment in an easily digested form is provided for the child. More depends upon the maintenance of its strength, and therefore upon the preservation of its digestion, than many physicians seem to think; and in addition to leaving written orders for the nurse as to the manner in which medicines are to be employed, the physician should give careful directions as to the means by which the food is to be prepared and the frequency and quantity in which it is to be administered. Care should also be taken to keep the kidneys acting freely by the use of some simple pure diuretic water, to which may be added several times a day a few drops of sweet spirit of nitre.

THE VALUE OF ALCOHOL AS A DRUG.

In the midst of the absolutely contradictory statements which one finds in the medical journals and text-books concerning the action of drugs, it is sometimes difficult for the physician to know what to believe or what course of therapeutics to follow; for on the one hand we may be told by an eminent authority that a certain remedy is useless in all the forms of a certain disease, while another, equally eminent, regards it as his sheet-anchor in the same disease. We believe there is one universal rule which should guide the general practitioner in his administration of remedies the efficiency of which is disputed, and this rule is to pursue a medium course in his methods of treatment, recognizing the fact that both those who are strenuously opposed to the remedy and those who are excessive in its praise represent extremes, midway between which safety lies for most of us.

Not only are new remedies but recently introduced to the profession subjected to these contradictory discussions, but remedies which have been before the profession for many years are every now and then violently attacked and equally ably defended by members of the profession who have conceived certain ideas concerning them. One would have thought that, in view of all the years during which alcohol has been used as a remedy, the profession had at last some definite idea of its value in the treatment of disease; and yet within the last few months there has been a very considerable amount of literature contributed to medical journals both for and against its administration. Thus, in the *Journal of the American Medical Association* of September 28, 1895, and in subsequent numbers, there appeared a series of articles, some of which were in favor of this drug, while others condemned it utterly. We are there told by Dr. Crothers that experience proves that the effect of alcohol upon the tissues of the body is in every way deteriorating; that it benumbs the nerves and interferes with the coördinating powers of the brain. Again, Dr. Quimby informs us that it has been clearly demonstrated that alcohol neither aids digestion, prevents disease, nor prolongs life, and he even goes so far as to state that alcohol has a great affinity for water and when introduced into the system interferes with the normal action of the red corpuscles and robs the blood of its due proportion of oxygen. Again, in the same number Dr. Grosvenor gives us a large amount of information designed to show the evil influences of alcohol, and in a series of sub-headings in his article readily shows the position which he holds. One of these headings is, "Alcohol is the Enemy of the Home;" another is, "Alcohol is Inimical to the Good Order of Society;" another, "The Widespread Use of Alcoholic Beverages in a Nation is a Menace to its Integrity and Life," and with similar sub-head-

ings an onslaught is made upon alcohol which, if it were an unknown drug, would condemn it in the minds of many persons who are apt to be carried away by enthusiastic condemnation or praise.

It is very far from the intention of this editorial to convince the readers of the THERAPEUTIC GAZETTE that alcohol is a harmless drug, or that they should cast it aside as being one which can never do good. Until the millennium comes, there will always be some persons who will claim that no good can come out of the use of alcohol, and there will be others who will shockingly abuse its employment both as a medicament and as a drug taken for pleasurable purposes. The fact, however, that it is abused by those who do not understand its action, that it is taken to excess by those who develop the alcoholic habit, and that it is under these circumstances capable of exercising a deleterious influence both morally and physically, does not in the slightest degree prove that its wise employment is not in many instances followed by beneficent and most useful results. Undoubtedly there are instances in which the use of alcohol is a mistake, and equally undoubtedly there are instances in which its administration is of the greatest possible practical value. In some instances it is true that other drugs, incapable of producing a habit, can be employed for the purposes of stimulation, and in many of these instances such a substitution is wise; but, on the other hand, we should not deprive our patients of a valuable remedy, if it is suited to their case, because of any theoretical or fanatical attacks upon it.

The trained physician knows only too well the deleterious influences of this drug when abused, and he also appreciates its extreme usefulness when employed in a proper manner. Universal condemnation of a remedy seldom brings the result which the writer desires; for practical experience, in demonstrating that the absolute condemnation is incorrect, is apt to carry the demonstrator to the other extreme and give him distrust of the evidence which has been presented to him.

The literature of medicine and the enormous accumulation of experience in regard to this remedy will never permit it to be shelved; and, on the other hand, those persons who are enthusiastic in exposing its injurious effects when abused will never allow us to lose sight of the fact that its effects may be evil as well as good. A little less dogmatic denunciation of alcohol on the one hand, and a little more wisdom in its use on the other, are the ends to which we should direct our efforts.

THE USE OF CROTON CHLORAL IN PAINFUL AFFECTIONS OF THE FACE.

It will be remembered by many physicians that chloral hydrate was introduced into medicine many years ago by Professor Liebreich, of Berlin, whose attention was first attracted to the remedy with the idea that on entering the body it would be broken up into chloroform and formic acid and so produce a surgical anesthesia equivalent to that caused by the inhalation of chloroform itself; and he also believed that the remedy for this reason would be useful for the relief of pain. As a matter of fact we all know that chloral in ordinary doses, and in most individuals, simply acts as a powerful hypnotic, causing sleep by some influence (which we do not understand) upon the intellectual portion of the cerebral cortex, and that it is not a remedy for insomnia due to pain, but rather for insomnia due to nervous disorder. It is true that eminent obstetricians, such as Playfair, have recommended its administration in massive doses for the relief of the pains of labor, but their example has not been followed by a large number of the profession, and chloral remains to-day a remedy for sleeplessness but not a remedy for pain.

On the other hand, croton chloral, or the butyl chloral hydras of the British Pharmacopœia, which is very closely allied to ordinary chloral hydrate, possesses far more analgesic power and is also much less depressing to the heart and respiration than chloral itself. For this reason it is to be employed in preference to chloral in all instances where insomnia is due to pain; and it seems to possess a particular affinity for the fifth cranial nerve, quieting it when neuralgia affects it. Curiously enough, however, in another form of pain with which the fifth nerve is connected, namely, that called toothache, croton chloral seems to possess absolutely no power in ordinary doses; but in *tic douloureux*, and other forms of pure nervous pain, its administration in the dose of three to five grains in pill every two hours until the pain is relieved or sleep comes on is to be recommended.

In other instances it may be given, as is chloral, in solution with syrup of acacia and water, or with water and glycerin, or with

some syrup of lettuce in water. As large doses as sixty grains have been employed, but twenty to thirty grains should be the maximum dose in most cases.

THE POSSIBILITY OF DISINFECTING THE SKIN OF AN OPERATIVE REGION.

To the already extensive literature bearing upon this subject, Lauenstein (*Archiv für Klinische Chirurgie*, bd. 53, heft 1) contributes the results of prolonged and apparently carefully conducted bacteriological and clinical research, and though these throw no specially new light upon the subject they emphasize certain facts which are sometimes ignored or forgotten by the busy surgeon.

In the first place the author demonstrates the fact that the *Staphylococcus pyogenes albus* is the microbe most frequently found in and on the skin, not only in Europeans, but practically in natives of all nations. The laboratory research was conducted by implanting in nutrient material portions of skin snipped off with sterile scissors. The method of disinfection followed was a very thorough one.

A certain number of patients were first taken, to whom simply a hot bath had been given; only twenty-five per cent. of these failed to give cultures. The next series represented those whose skin had been locally once thoroughly disinfected; thirty-six per cent. of these gave no cultures. The final series represented those whose skin had been repeatedly disinfected; considerably more than half of these failed to give cultures.

It is interesting to note, in considering the value of this work, that out of three experiments with inflamed and fistulous skin, one failed to give any culture, although no cleansing had been practiced, while after disinfection of similar inflamed areas two out of seventeen cases failed to give cultures. In fifteen instances skin was taken both from disinfected inflamed areas and from areas which had not been previously treated; in only three instances was the result of disinfection apparent; in one case the grafts from both regions proved sterile.

After the *Staphylococcus albus*, the *S. aureus* follows in frequency of appearance.

The author quotes Rutherford, who out of thirty-eight examinations of disinfected surfaces obtained apparently clean skin in only twelve. This author used carbolic acid, permanganate of potassium, oxalic acid, benzin, alcohol, ether, glycerin, and bichloride—surely a sufficiently formidable list.

The same author showed that a drop of the corrosive chloride solution with which the skin is bathed, if placed in the nutrient material with the excised piece, does not inhibit growth; indeed, he added corrosive chloride to bouillon in the proportion of 1 to 5000 and found that on this mixture germs would develop vigorously. Similar results were obtained on bouillon to which had been added carbolic solution.

From these experiments, and from many others conducted on similar lines but perhaps in some cases more carefully, or at least more accurately reported, it seems plain that by present methods the surgeon cannot hope to disinfect the skin thoroughly. That this end, however, is very much more likely to be attained after repeated disinfections, with the application of wet antiseptics in the interval, than it is by one thorough cleansing, seems clear. It is evident, then, that, no matter how thorough and how long-continued the disinfection has been, infection may start from the skin and under favoring circumstances reach the underlying parts and seriously complicate wound-healing.

Hence it follows that stitches which include the whole depth of a wound are unsafe, since infection may follow their course. The deeper parts of the wound should be closed by buried sutures; and the skin stitches should be either percutaneous, thus avoiding the ducts of the sebaceous glands in which the germs are particularly apt to be found, or should include only the skin, and should be made of some smooth, non-absorbing substance, such as silver wire or Chinese silk-worm-gut, in preference to catgut, which by swelling and becoming gelatinous affords an admirable medium for the propagation and diffusion of the germs. The impossibility of skin-disinfection also constitutes a strong reason for omitting drainage whenever this is possible, and for keeping the skin surface surrounding the wound dry.

Reports on Therapeutic Progress

SOME CONSIDERATIONS IN REGARD TO THE ADMINISTRATION OF ARSENIC.

VINAY, in *Lyon Médical*, April 12, 1896, points out that arsenic may be given by the stomach, subcutaneously, or by the rectum. The gastric mode of entrance, the one most commonly resorted to for the administration

of full doses, very frequently produces burning in the epigastrium and loss of appetite. Nevertheless in many cases of pernicious anemia and pseudo-leukemia these full doses are necessary. By the hypodermic method these symptoms are avoided, but it is necessary to avoid local accidents by the most careful antisepsis. It is well to use Fowler's solution diluted with a little cherry-laurel water, but it must not be forgotten that such an injection is very apt to produce a good deal of local irritation as well as much pain. Probably it is better to use a solution of arseniate of sodium. For rectal injection the following mixture may be employed:

℞ Fowler's solution, 1 drachm;
Distilled water, 2 ounces.

One drachm of this may be injected into the rectum night and morning, and after four days' treatment it can be given three times a day, namely, morning, noon, and night. If the medication is not pushed too forcibly and frequently, it does not produce rectal tenesmus.

THE TREATMENT OF GASTRIC ULCER COMPLICATED BY NEURALGIA.

The *Journal de Médecine de Paris* of April 5, 1896, gives the following directions: Absolute rest and abstinence from food, the patient remaining in bed continuously. A small piece of ice may now and again be placed in the mouth if absolutely necessary, and over the stomach a small ice-compress will exercise a good influence. If the hemorrhage progresses, it is well to inject into the anterior abdominal wall over the stomach the following prescription:

℞ Filtered fluid extract of ergot, 15 minims;
Distilled water, 1 drachm;
Carbolic acid, 1 minim.

The nourishment must be given by rectum. The following may be employed:

℞ Milk, 4 ounces;
Yolk of egg, 2;
Salt, a spoonful;
Red wine, a teaspoonful;
Starch, 15 grains.

Warm, and give three injections a day, after a water clyster has been given to cleanse the bowel.

To combat the pain, it is well to administer from half a grain to a grain of codeine; and for the purpose of moving the bowels, which naturally become constipated, injections of hot soap and water, glycerin, olive oil or castor oil are to be employed. For the first four to seven days after the hemorrhage the patient must rest in bed in the dorsal position, and when food is first taken it must consist of milk with a little coffee, beef-tea, bouillon, and the yolk of an egg stirred up with Vichy water or some alkaline liquid. No cocoa, chocolate or wine must be taken. For several weeks after the hemorrhage a very light diet should be taken, and small quantities of Carlsbad water or Carlsbad salts should be used to keep the bowels open. Hot applications should also be made to the skin, with the object of bringing the blood to the surface.

THE TREATMENT OF CHRONIC NASO-PHARYNGITIS.

The *Journal des Praticiens* of April 11, 1896, recommends the following plan of treatment:

First, the mucous membrane of the nose should be washed by means of the following prescription:

℞ Bicarbonate of sodium,
Biborate of sodium,
Chlorate of sodium, of each, 1 grain;
White sugar, 36 grains.

To be dissolved in a half-glass of hot water.

In other instances the following antiseptic solution may be employed:

℞ Alpha-naphthol, 45 grains;
Alcohol, 10 ounces.

A teaspoonful of this solution to be added to a quart of hot water which has been boiled.

In other instances, irrigations with boric acid or salicylate of sodium are of value. Sometimes irrigations with the following application are useful:

℞ Liquid vaselin, 4 drachms;
Salol,
Resorcin,
Salicylate of bismuth, of each, 1-20 grain.

THE TREATMENT OF GONORRHEAL RHEUMATISM.

The *Journal des Praticiens* of April 11, 1896, points out that true rheumatism often resists the salicylate of sodium, and still more frequently is gonorrheal rheumatism unaffected by this drug. The treatment which is recommended by BALZER may be grouped under the headings of prophylactic, internal, local, and surgical. Under the head of prophylactic treatment, it goes without saying that every means should be exhausted for the purpose of shortening the attack of gonorrhea. Nor should it be forgotten that the attack may apparently be aborted and yet be active enough to cause joint-symp-

toms. So far as internal treatment is concerned, large doses of from forty-five to sixty grains of salicylate of sodium combined with some one of the balsams are useful. In the chronic cases iodide of potassium often does good. The local treatment consists in immobilization of the limb, the application of ice-bags upon the painful part, and the application of soothing ointments which also possess a resolvent influence. The following may be used:

℞ Salicylic acid,
Oil of turpentine,
Lanolin, of each, 2½ drachms;
Lard, 3 ounces.

In other instances an ointment containing guaiacol in the proportion of one drachm to the ounce may be employed. In chronic cases we should use counter-irritation, massage, electricity, and turpentine baths, and recommend that the patient resort to some hot springs. Should there be considerable effusion into the joint, compression may be used for its absorption, or if the effusion becomes purulent it should be carefully aspirated, and by means of the same needle sixty to ninety minims of a 1:4000 solution of corrosive sublimate should be injected. Should the articular inflammation become exceedingly severe, an arthrotomy is indicated.

ALBUMINURIA AND UREMIA FOLLOWING THE APPLICATION OF BLISTERS.

In the *Revue de Thérapeutique Médico-Chirurgical* of April 1, 1896, HUCHARD calls attention to the fact that blistering in Germany and Austria long since fell into desuetude, owing largely to the fact of its abuse. There are also cases on record in France, as well, in which the application of blisters to persons who were suffering from advanced kidney disease produced the disagreeable symptoms mentioned in the title of this article.

Thus, in one case a young girl of eighteen years was admitted to the Necker Hospital with symptoms of gastric disturbance and constipation; there was also severe abdominal pain, gastralgic in character. On the day of admission an examination of the urine showed an inconstant quantity of albumin, but as the pain in the abdomen persisted a blister six by eight centimeters in dimensions was applied for ten hours. Five days afterward it was found that the face of the patient was puffy and that there was a condition of marked albuminuria with severe lumbar pain. Under the use of an exclusive milk diet she did not improve: there were disturbance of vision and persistent headache, nocturnal restlessness, intense dyspnea, and great acceleration of the respiratory rhythm; also nausea, vomiting, convulsions, and absolute amaurosis. Finally anuria became complete, but first the urine was found to contain enormous quantities of albumin. Ten days after the beginning of these serious symptoms improvement began: the edema disappeared from the extremities, but persisted in the face; the urine was more abundant, contained less albumin, and there was also a diminution in the dyspnea; the pulse, however, was exceedingly slow, only 44 per minute. Ten days later the patient seemed to have made a complete recovery, the albumin having disappeared from the urine.

From this case and from others which are mentioned, we are warned that care should be taken in applying blisters over considerable areas to patients who suffer from any insufficiency of the kidneys.

THE VALUE OF RESPIRATORY GYMNASTICS IN MAINTAINING THE INTEGRITY OF THE LUNGS AND AS AN AID IN TREATMENT.

In the *Boston Medical and Surgical Journal* of May 28, 1896, OTIS writes in a very practical manner on this topic. He tells us that the general exercises which are good for increasing the respiratory power are very numerous. Walking, however, he does not consider a very valuable one. "A person who only works and walks," as a recent writer on bicycle exercise says, "hardly ever fills his lungs." There are swimming, tennis, rowing, bicycling, skating, golf, running, jumping, hand-ball, mountain-climbing, going up stairs, the *cure de terrains* of Oertel, dancing, singing, reading aloud, free-hand classwork in the gymnasium, and rope-jumping. Rope-jumping is a common form of exercise with those training for boxing, to increase the "wind." All exercises which bring the legs into violent action are especially good for the respiration, on account of the number and size of the muscles employed. Then there are the direct or local respiratory exercises—those especially devised for training and developing the respiratory muscles and lungs. Now these direct lung exercises are applicable not only to the well, but to those who, from pulmonary lesion or general bodily weakness, are unable to undergo the more active general

exercises; for they increase the efficiency of respiration without increasing the need of respiration, creating the "thirst for air." Of course, all exercise is interdicted to those suffering from acute inflammation, the febrile state, or serious hemorrhage.

These especial pulmonary exercises are simple and yet efficacious: Standing erect in a well ventilated room, or wherever there is pure air, with the hands on the hips, and taking long, deep inspirations and slow expirations, beginning at the bottom of the chest and filling up, so to speak. This, alone, done several times a day, will often materially increase the lung capacity, as the writer has frequently verified. "Numerous observations," says Lagrange, "prove that voluntarily taking a certain number of deep breaths every day is sufficient to produce in a short time an increase in the circumference of the chest, which may amount to two or three centimeters."

In these breathing exercises the rhythm can be varied according to the following schedule:

1. Slow and long inspiration and expiration.
2. Inspiration and expiration long and quick.
3. Slow and long inspiration, and long and quick expiration.
4. Long and quick inspiration, and slow and long expiration.
5. Short inspiration and long expiration.
6. Long inspiration and short expiration.
7. Short inspiration and expiration.
8. Inspiration by two or three stages or jerks, and expiration long.
9. Inspiration long and expiration by stages or jerks.
10. Inspiration and expiration by stages or jerks.

In all these exercises one should breathe through the nose only.

Then there are the various arm movements with their modifications, in connection with the deep breathing:

Slowly raising the arms to a horizontal position and then over the head until the hands meet, slowly and deeply inspiring while performing the movements, and expiring while lowering the arms; thus the supplementary respiratory muscles of the chest and shoulders are brought into action.

Raising the arms and then carrying them back and down, describing a movement of circumduction.

Standing erect and straightening up, and finally rising upon one's toes, deeply inspiring during this movement.

Extending the arms in a horizontal position, and carrying one of the legs back so as to offer a large base of support to the body.

Lying on the back horizontally upon the floor or a table, and raising the arms backward and over the head while inspiring; if lying upon a narrow table, the arms can describe a circle about the head.

The exercises with wands or bar-bells, which demand rather more exertion perhaps than the free-hand movements.

In the Swedish system of gymnastics there is almost an innumerable variety of respiratory exercises, most of which, however, are but modifications and combinations of a few simple movements, and most of them can be performed without apparatus. Then there are the gymnastic devices and apparatus for increasing the lung capacity and developing the respiratory muscles; the so-called "chest-developers" and "lung-expanders;" the "chest-weights" and "quarter-circle;" the high parallel bars and traveling rings; and the heaving movements of the Swedish gymnastics, which are usually exercises of hanging and climbing by means of rings, bars, ladders, and poles.

Renzi describes the following apparatus for prompting deep respiration, which he makes use of with beneficial results in his clinics as well as in his private practice: To two hooks in the wall are attached cords, and to these a cross-bar much like a flying trapeze; the height of the bar is adjusted to the height of the patient. This cross-bar is seized by the patient with outstretched arms, who leans forward, forming a curve with his body, the two points of support being the hands on the bar and the toes on the floor. In this position of the body the patient is forced to take deep inspirations whereby the thorax is much expanded. The standing position is then resumed, and the thoracic muscles relaxed, when a deep inspiration is practiced. These two movements are performed alternately from twelve to twenty times a minute.

If the patient is too sick or too feeble to take any of these various exercises, either free-hand or with apparatus, he can be given passive respiratory exercise, much after the manner of the Sylvester method for producing artificial respiration. Sitting upon a bench or stool, and leaning upon the chest of an attendant standing behind him, the arms are raised above the head synchro-

nously with inspiration. With the lowering of the arms, and pressure against the sides, forced expiration is produced. This can also be practiced in the recumbent position.

Although the movements of inspiration are the most important in the respiratory act, yet expiratory exercises have their place. These are generally passive, like the act itself. One which Lagrange especially notes is the following: The subject lies flat upon the abdomen on the floor or a bench, and raises his head and shoulders, thus contracting the extensor muscles of the vertebral column. In this attitude the abdominal muscles are stretched and prevented from contracting and pulling down the chest-walls. Forced expiration is then practiced. In emphysema especially, expiratory movements are useful; these can be simple direct pressure upon the chest-walls, with various manipulations of the thoracic muscles, or a peculiar Swedish movement also noted by Lagrange, which has for its object the mobilization of the semi-anchylosed chest-wall, a condition existing in chronic emphysema: The patient is seated astride a narrow bench, or his legs are held, and two attendants, seizing him by the shoulders, rotate the trunk upon its axis, alternately from right to left, and from left to right, the object being to mobilize the vertebro-costal articulations and to restore movement to the chest-walls.

Beside all these methods of respiratory exercise, there are certain machines or apparatus devised by Zander and Nycander. Some excite deep inspiration by passive movements for raising the ribs; others render the expiration more complete by compressing the ribs through the use of girths or straps which act upon the thoracic walls at the moment when the lungs empty themselves of air. The latter machines are said to render great service in pulmonary emphysema, where the expiration is always laborious and incomplete.

Finally, we have massage of the respiratory muscles, which the Swedish physicians always prescribe at the same time the active and passive gymnastic movements are given.

As will be seen, the exercises available to produce better respiration are very numerous and varied, but the underlying principle is simple, namely, to bring into more vigorous play the muscles which expand the thorax, and at the same time excite deep, full, free breathing; to bring the vital force of the lungs to its maximum. It must be borne in mind that all exercises of the thoracic muscles for the purpose of producing an increase in that cavity must at the same time be coincident with deep breathing; the amplitude of the respiratory movements must be increased; the lungs must push out from within as well as the thoracic muscles pull from without. Once having established a proper respiration by the use of some of the simple respiratory exercises, and devoting a few minutes to it every day, the habit of full and deep breathing is formed even when one is in a state of repose. And further, one is fortifying himself against the possibility of disease of the lungs by thus maintaining the pulmonary tissue in an active, healthy, and well nourished condition, and there is no portion of the apices which from insufficient use and poor nourishment is a menace to the individual by offering a fitting soil to a wandering bacillus. In convalescence from pneumonia and pleurisy with effusion, the importance of expanding and revivifying, as soon as possible, the lung whose functional capacity has been diminished and whose nutrition has been depressed, can hardly be overestimated. As Lagrange truly says: "In all the inflammatory maladies of the lungs there persists a tendency to stasis and passive congestion, to correct and obviate which no means is more efficacious than very ample and deep inspiration."

When the border line has been passed and incipient phthisis has been developed, respiratory exercises are a most important and precious means for restoring the weakened lung tissue and increasing its resisting power. The beneficial effects of the high-altitude treatment are largely due to the fact that one is compelled to breathe fully and deeply in order to obtain the requisite amount of oxygen.

In every well arranged plan of treatment of pulmonary tuberculosis, where any exercise at all is allowable, pulmonary gymnastics, carefully arranged and adapted to the strength and condition of the individual, should be embraced. In the famous sanitaria abroad, where such excellent results are obtained, they play an important part in the treatment. We may in the future obtain a serum product which will accomplish all that was hoped for from tuberculin; but one must not forget that large numbers of consumptives are now being cured and restored to usefulness by means of the persistent application of nature's remedies, sunlight, abundant alimentation, continuous outdoor life, hydrotherapy, and good breathing. The *vis*

medicatrix naturæ may not always give brilliant and rapid results, but when intelligently employed it is a method which rarely disappoints either the confiding physician or the trusting patient.

AN OINTMENT FOR PAINFUL DEFECATION DUE TO FISSURE.

℞ Extract of conium, 1 drachm;
Castor oil, ½ ounce;
Lanolin, 1 ounce.

—*Journal des Praticiens*, May 9, 1896.

ANTI-STREPTOCOCCIC SERUM IN PUERPERAL FEVER.

LETRAIN describes the following case in the *Progress Medicus:* "Madame R., age twenty-five, living at Joen-en-Charnrei, was confined February 7, 1896, by a midwife of the locality. On the 10th she was seized with a severe rigor, and on the 13th I was called in to take charge of the case. The diagnosis was not obscure: the woman was evidently suffering from grave puerperal sepsis, but the immediate source of the infection was indeterminate. I may mention, however, that the lying-in room was reeking with emanations which came from an adjoining privy through an ill-fitting door! At my second visit on the 15th the patient's condition had changed for the worse: she was semi-delirious; temperature 104.7°; pulse 150, small and compressible; abdomen swollen, and very tender on pressure; tongue dry; there was fetid diarrhea. The case seemed too far gone for curetting of the uterus. In this opinion I was supported by Dr. d'Lageniere Mans, whom I had occasion to meet during the course of the disease. I promptly telegraphed to Dr. Recin, of the Pasteur Institute, who, with alacrity for which I shall be forever grateful, at once gave an order for me to be supplied with the anti-streptococcic serum wanted. On the morning of the 16th, the temperature being 104.3°, pulse 148, five cubic centimeters of the serum were injected. On the 17th, temperature 101.3°, pulse 120, the second injection was administered. On the 18th, temperature 100.4°, pulse 110, another injection of five cubic centimeters was given. On the 19th, temperature 104°, pulse 130, the patient complained of pain at the seat of the first injection, and on examination it was found that at this point there was a slight tumefaction, with redness and puffiness of the integument. On the 20th the fourth injection was administered; temperature 98.2°, pulse 80; the inflammatory phenomenon of the preceding day had disappeared; the patient felt quite well. Another injection was given on the 22d; temperature 98.6°, pulse 70. The abdomen had returned to the normal condition, sustaining pressure everywhere without pain. The diarrhea had ceased, and the patient had now a good appetite. The sixth and last injection of five cubic centimeters was given, and henceforth the case progressed most favorably, and at my last visit on the 1st of March I found Madame R. enjoying perfect health."—*The Scalpel*, June, 1896.

THE USE OF INTRA-VENOUS INJECTIONS OF SALINE SOLUTION IN INFECTIOUS DISEASES.

LEJAR reported to the Société de Biologie, May 11, 1896, the results of his study of this method. His first case was that of a young boy of seventeen years who was suffering from acute osteomyelitis of the upper half of the left femur; there was a large subperiosteal abscess, and his general condition was alarming, breathing hurried, pulse small and frequent. A few days later another abscess developed, on the sternum, which on examination was found to contain the *Staphylococcus pyogenes aureus.* On the 22d of March he was given a subcutaneous injection of between one and two pints of normal saline solution and two intra-venous injections of two quarts. The temperature fell several degrees, and the injections were repeated again and again. During the course of five days the patient received no less than fourteen quarts of artificial serum. The symptoms of general infection disappeared, the abscess improved, and altogether the progress of the case was favorable.

The second case was that of a man aged fifty-two, who had met with an accident by which his left foot was injured and a large portion of the left temporal region of the head contused, the skin being filled with small particles of coal dust. During the night it was necessary to amputate his left arm, and on the next day amputation of the right leg became necessary. The patient was febrile, pale, and in a condition of shock. An intra-venous injection of two quarts of artificial serum was given; and on the next day, the fever still being present, the pulse small, and the patient in delirium, another injection of two quarts was given. During the next two succeeding days four quarts

were employed, and on the following day four quarts more. Six days after the injury the patient's pulse was good, his delirium had ceased, and the injections were suspended. The delirium returned in the night, and an injection of two quarts was given for its removal. The disagreeable symptoms then disappeared, the temperature went almost to normal, the appetite revived, and the case progressed favorably.

The third patient was a young woman twenty-one years old, operated upon for a very large cystic ovary. Seven hours after the operation, she was seized with a chill, the pulse became very feeble, vomiting supervened, the temperature rose several degrees, and there was great pain in the abdomen. The case threatened to terminate fatally in a very short time. An intra-venous injection of seven pints of artificial serum was given, and ten hours later another of three quarts. That night the patient was quiet, vomiting ceased, the pulse was good, and the results produced were altogether most favorable.

Dejar believes that these injections are of the utmost value, and that the great difficulty is that they are not used in sufficiently large amounts. In ordinary conditions subcutaneous injections are sufficient, but where the condition is urgent the intra-venous method should be employed. It is necessary, however, for the success of the treatment that the kidneys be able to eliminate the infectious materials with the liquids. In two cases which he knows of, the kidneys did not excrete the liquid, and at the autopsy they were found to be in a condition of sclerosis.

Oussoff does not believe that a complete explanation of the value of these injections can be offered, but he insists upon their practical utility.—*La Médecine Moderne*, May 13, 1896.

CHLOROSIS, WITH ESPECIAL REFERENCE TO ITS TREATMENT BY INTESTINAL ANTISEPTICS.

TOWNSEND, in the *Boston Medical and Surgical Journal* of May 28, 1896, reports having treated thirty out-patients with beta-naphthol, without iron, for purposes of intestinal antisepsis. Two grains were given three times daily, and the average length of treatment was twenty-three days. The average gain in hemoglobin per week in these cases was a little less than two (1.85) per cent., the greatest gain being ten per cent. for two weeks and six per cent. for five weeks. The patient that did the worst lost 7.5 per cent. per week for two weeks.

After three weeks of beta-naphthol treatment, if the patient gained less than two per cent. of hemoglobin a week she was put on Blaud's iron pills.

There were thirty-one cases treated with Blaud's pills, five grains only, t.i.d., for an average period of four weeks. The average gain per week was a fraction over five per cent. (5.07), or more than two and a half times as much as in the case of beta-naphthol. In Dr. Stone's cases treated in the clinic with Blaud's pills, a gain of five per cent. per week is stated to be a fair average.

As so many cases were constipated (sixty-five per cent.), and as this symptom was always treated with cascara, whether the patient was given beta-naphthol or iron, it seemed to the writer of interest to treat a series of these constipated cases with cascara alone. Seven cases were so treated, to some of these nux vomica and hydrochloric acid being also given where the stomach was disordered. The results, however, were not encouraging, as these cases, after treatment averaging two weeks and one day, lost on an average one and a half per cent. of hemoglobin a week. The greatest gain made was but four per cent. in one case. These results, as well as the thirty-five per cent. of the cases of chlorosis without constipation, do not bear out Sir Andrew Clark's deduction that chlorosis is largely dependent on constipation.

Of the thirty-one cases treated with iron, twelve had previously had a preliminary treatment for three weeks with beta-naphthol, with an average loss of one-twelfth of one per cent. When put on iron these gained 6.7 per cent. per week, for an average of thirty-two days. This certainly shows the superiority of the iron treatment in these cases, and seems also to point to a certain advantage from the preliminary treatment with beta-naphthol; for of nineteen cases treated with iron without the preliminary beta-naphthol treatment, the average gain for three and one-half weeks was 4.5 per cent. per week. A simple computation will show, however, that at the end of seven weeks the last set of cases continuing the slower gain would be ahead of the other cases with the two sets of treatment. What the effect of a combination of the two treatments at the same time would be, the author is now trying to find out at the hospital, and the field looks promising from the results obtained above.

TABULATED SUMMARY OF TREATMENT, SHOWING AVERAGE GAIN IN HEMOGLOBIN PER WEEK.

	Per cent.
Beta-naphthol, 30 cases	1.85
Blaud's iron pills, 31 cases	5.07
Cathartics alone, 7 cases	1.50
Blaud's pills, after a preliminary treatment with beta-naphthol, 12 cases	6.70
Blaud's pills, without a preliminary treatment with beta-naphthol, 19 cases	4.50

Since the above was written, the writer has been able to test the effect of iron and beta-naphthol combined in three months' service in the Out-patient Female Medical Department of the Massachusetts General Hospital. During this time ninety-two cases of chlorosis were recorded. Of these, twenty-eight were observed from two to seven weeks, or an average of 4.3 weeks. Those seen once or twice only are excluded. In all, the hemoglobin was estimated at each visit, and, to make sure of the diagnosis, the blood was counted once. For this work the author is indebted to the externe, Mr. W. H. Smith, and a number of able assistants. The average of two readings of the hemometer was always taken, and without knowledge of the percentage obtained at the previous visit, the examiner thus avoiding prejudice. The cases were all treated with two grains of beta-naphthol in tablet form and five grains of Blaud's iron pills three times daily.

The average gain per week in these twenty-eight cases was 7.9 per cent., the maximum gain being 20 per cent. per week for two weeks in one case, 14 per cent. for three weeks in another, 13 per cent. for four weeks in another, while another patient averaged a gain of 11.4 per cent. a week for five weeks.

The average amount of hemoglobin possessed by each patient before beginning treatment was 48 per cent. After 4.3 weeks of treatment it was 82 per cent. The rapid return of health, as shown by the symptoms of the patient and the improvement in color, was often most striking.

The results of this combined treatment, as will be seen, are considerably better than those obtained with iron alone, and much better than those with beta-naphthol alone.

PREVENTION OF THIRST FOLLOWING ABDOMINAL OPERATIONS.

JOHN G. CLARK contributes an interesting paper of great practical utility to the *Maryland Medical Journal* of May 30, 1896, upon this subject. He points out that of the minor complications following abdominal operations, thirst is one of the most common and in some cases exceedingly distressing. He recalls numerous instances where patients have resorted to every means possible to obtain water. One patient, a negress, in the wards of the Johns Hopkins Hospital, after an exceedingly grave operation, got out of bed while the nurse was absent a few moments from the room, and crawled to a water-cooler some distance away.

The rule usually followed by surgeons is to withhold liquids for twenty-four hours, until the patient is free from nausea and vomiting, after which water is given in small quantities.

When we consider the amount of waste products which must be thrown off through the various excretory channels following an abdominal operation, we must admit there is ample cause for intense thirst, and if there is no compensation for twenty-four to thirty-six hours the distress of the patient is frequently intense. The mere administration of ether without operation is often followed by intense thirst. Add to this factor a prolonged operation, with more or less loss of blood, and we have three potent co-operating causes for the production of this complication.

Numerous plans have been suggested to prevent thirst; among the latest, one by Dr. Hummiston, of Cleveland. His plan is to place the patient on a greatly increased water diet for three days before operation, thus hoping to store up sufficient residual water to tide the patient over the first twenty-four hours after operation. This plan may be of service in cases where it is possible to put it into effect, but in the usual hospital practice and in many operations performed in private houses it is not possible, as in many instances the case is an emergency one and requires operation within twenty-four hours after being seen by the surgeon. This is especially true in gunshot wounds of the abdomen, appendicitis, ectopic pregnancy, etc., and it is in these cases that the thirst is the most intense, and vomiting, which prevents the administration of water, the most frequent.

It has been the practice for many years in medical and surgical cases to administer water by the rectum when, for any reason, it was interdicted by the mouth, but the routine injection of saline solution (0.6 per cent.) as a systematic procedure for the control of thirst after abdominal operations has not, so far as the author knows, been employed.

For the last two years it has been a part of the concluding technique of every abdominal

operation performed in the Gynecological Department of the Johns Hopkins Hospital, to inject one liter of normal salt solution into the rectum, and the result has been so very satisfactory that it is now proposed to adopt it for all operations, even of minor degree.

In order that the patient may retain the enema, she must be still under the anesthetic when it is given; otherwise the rectum will not tolerate such a quantity of liquid. For this reason it is impossible to give liquids in sufficient quantities in the conscious subject to be of any great service in assuaging the thirst.

At the conclusion of the operation, before the abdominal dressings are applied, the patient is elevated to the medium high Trendelenburg posture, a stiff rectal tube is inserted well up into the sigmoid flexure, and the fluid slowly poured into the glass funnel, which is held three or four feet above the level of the patient's buttocks. In this posture the solution gravitates downward into the sigmoid flexure and colon and is very rarely expelled, even during the most violent attacks of retching and vomiting during the recovery from anesthesia.

Clark has reviewed the special charts of one hundred abdominal-section cases which have not had the benefit of this treatment, and one hundred cases which have, and he is able to report the most gratifying results, not only as regards alleviation of thirst, but also in the reduction to a minimum of vesical irritability, so common in operative cases.

One or two months after the adoption of the plan the head nurse in the gynecological wards began to report the most remarkable improvement in the intense thirst usually experienced by the patients. Up to this time the nurses had not been informed of the means being employed to prevent this complication, as the surgeons desired to obtain an unsolicited and unbiased report from them. From this time, however, they were instructed to make the most critical observations concerning the presence or absence of thirst; and in the one hundred charts, which have been taken at random from the history files, there is very rarely any note made further than that the patient passed her first twenty-four hours without even asking for water.

Another most conclusive evidence of the effect of these enemata is shown by the increase in the urinary excretion. Reference at this point to Dr. Russell's paper on "Urinary Analysis in Gynecology," published in the *Johns Hopkins Hospital Reports*, 1894, is of especial interest, as the urinary excretion of one hundred abdominal cases under the new regimen shows a most remarkable increase over that noted by Dr. Russell.

In Dr. Russell's paper the frequency of vesical irritability in post-operative cases was attributed to the retention of small quantities of highly concentrated urine in the bladder, which possessed more than the normal amount of organic salts with greatly decreased watery constituents. This hypothesis is unquestionably a correct one, as vesical irritability is comparatively infrequent in the cases of the last year. Catheterization is much less frequently required, and consequently post-operative cystitis is infrequent.

The natural result of almost doubling the watery constituent of the urine is to decrease the specific gravity. In cases where the enemata were not given, the average specific gravity of the urine was 1.030, while in those receiving them it showed a reduction to 1.022.

The average quantity of urine excreted for the first seven days after operation in the two sets of cases was as follows:

WITH SALINE ENEMATA.		WITHOUT SALINE ENEMATA.	
First day	752 Cc.	First day	481 Cc.
Second day	626	Second day	505
Third day	605	Third day	498
Fourth day	635	Fourth day	550
Fifth day	654	Fifth day	595
Sixth day	672	Sixth day	656
Seventh day	646	Seventh day	591

The lowest point in the urinary excretion is reached on the third day, which is accounted for by the fact that on the evening of the second day the cathartic is given, and usually acts on the third day.

Soft diet is begun on the fifth and sixth days, and as a result there is another drop in the urinary excretion, as the patient is then taking more of soft than of liquid diet.

At the end of the fifth day the excretion in both sets of charts corresponds, and from this time on gradually increases until the normal is reached, about the twelfth day.

When one sees the intense thirst which patients experience after operation entirely alleviated in the great majority of cases by this means, he will be more strongly convinced of its efficacy than by the mere citation of statistics.

THE USE OF MALAKINE AS AN ANTI-RHEUMATIC.

In 1893 Jacquet called attention to the anti-rheumatic preparation known as malakine, and during the last few months Bauer

and Merkel have studied its action, arriving at opposite results: Bauer regards it as inferior to the salicylates, but Merkel, on the contrary, considers it superior. One of its advantages is that it does not seem to be as poisonous as salicylic acid.

Recently Korotkoff and Oussoff published reports of three cases in which they employed this drug. The first case was one of articular rheumatism without complication; in the second the trouble was subacute and there were nervous phenomena; and in the third the attack was acute but very grave and associated with endocarditis. In all three cases the malakine produced a good effect in from three to four days; the temperature returned to normal without notable oscillation, and the pain ceased. The dose is from forty-five to sixty grains a day, and they did not discover any of the disagreeable symptoms of cinchonism which follow the use of salicylic acid.—*La Médecine Moderne*, May 13, 1896.

AN OINTMENT FOR MUMPS.

According to the *Journal des Praticiens*, May 9, 1896, TRANCHET recommends the following:

℞ Ichthyol,
Iodide of lead, of each, 45 grains;
Chloride of ammonium, 30 grains;
Lard, 1 ounce.

This ointment is to be applied to the swollen parts three times a day. In some instances vaselin may be used in place of the lard, and sometimes belladonna may be added with advantage.

THE TREATMENT OF SYDENHAM'S CHOREA.

In the issue of the *Journal de Médecine de Paris* of May 17, 1896, CHERON concludes a paper upon this topic. In an earlier issue of the journal he had discussed the pathogenesis of this affection. He quotes Gubler, Vulpian and others as having employed bromide of potassium with advantage in a certain number of cases for the purpose of allaying nervous irritability, and calls attention to the fact that Bastian has used with advantage a potion containing chloral and bromide. Again, Volner, Texier and Dupré claim that antipyrin is of very great value, and Simon uses this drug as follows: On the first day he gives to the patient, after meals, twenty grains of antipyrin in three cachets, on the following days decreasing the dose gradually until it amounts to but one drachm in twenty-four hours. Under these circumstances he claims that the choreic movements entirely disappear. A child who had suffered from chorea for two years, and in whom the usual drugs had failed to produce a cure, was cured in nine days by the administration of as much as one ounce of antipyrin during that time. In sixty observations made by Legroux, he had forty-one cures and nineteen failures. Of these forty-one successes, the cure was produced in from thirteen to twenty-one days. Cheron also quotes Eskridge of Colorado as having given doses of antipyrin to choreic cases with advantage, and Moncorvo and Oulmant have gotten similar results.

For the treatment of the general condition, there is little doubt that arsenic is after all the best remedy. Where it cannot be tolerated by the stomach, Cheron believes it should be administered as a hypodermic injection in the form of Fowler's or Pearson's solution. Of twenty-three cases in which these injections were employed by Wiederhofer, in three instances an abscess was formed, and in twenty-two children out of the twenty-three a cure was obtained in four weeks. Wiederhofer recommends the injection of Fowler's solution and distilled water, equal parts. The only difficulty is that the injection is very painful. When arsenic is administered by the stomach it must be given in ascending doses, and gastro-intestinal irritation or cutaneous pigmentation may result, in which case the drug must be stopped. Should anemia be present, iron is of value.

In conclusion, Cheron remarks that cold applied to the vertebral column by means of ether in an atomizer or chloride-of-methyl spray has seemed to do good. Gymnastics are also of value, and in some instances if the children are sturdy a cold douche may be applied to the spine.

THE TREATMENT OF CHRONIC ULCERS BY COLD COMPRESSES.

La Médecine Moderne of May 13, 1896, calls attention to YAKOWLEFF'S methods with cold compresses, used with success in the treatment of chronic ulcers, and claims that they cause rapid cicatrization. He explains their usefulness by the theory that the local circulation is thereby rendered more energetic, and hence the nutrition of the tissues is improved. The treatment has the advantage that the compresses do not adhere to the ulcer and provoke irritation.

THE TREATMENT OF CHOLERA MORBUS.

The *Journal des Praticiens* of May 16, 1896, tells us that the principal indication for this condition is the administration of lactic acid for the purpose of rendering the intestinal canal antiseptic. The following prescription is recommended:

℞ Lactic acid, 2 to 4 drachms;
Sugar of milk, 2 ounces;
Boiling water, 1 quart.

This mixture is to be taken during the course of twenty-four hours. For the condition of chilliness or collapse which may come on, alcoholic drinks should be given, preferably hot; irrigations and hot baths may be of service. Intra-venous injections of saline solution may also be employed if great prostration is present.

Mathieu recommends that injections be administered very slowly for the period of twenty to twenty-five minutes, of as much as six ounces of the following mixture:

℞ Distilled water, 1 quart;
Sulphate of sodium, 2½ drachms;
Chloride of sodium, 1 drachm.

Great care should be taken by persons who have a predisposition to cholera morbus to avoid iced drinks and green fruits.

IODIDE OF POTASSIUM OR IODIDE OF SODIUM.

According to BRIQUET, the sodium iodide is preferable to potassium iodide in all maladies of the respiratory tract and for certain rheumatic pains. The potassium salt is badly tolerated in many instances of hepatic disease, but is undeniably good in these cases. He has found that where the patients do not tolerate iodide of potassium well, the employment of iodide of sodium first prepares them for the potassium salt. He has also been able to get the effect of the iodine in many patients by the use of the sodium salt when the potassium was contra-indicated because of its depressant effect.—*Revue Internationale Médecine et de Chirurgie*, April, 1896.

THE TREATMENT OF OPIUM POISONING BY PERMANGANATE OF POTASSIUM.

The *British Medical Journal* of May 16, 1896, contains an article with this title by MAYNARD, who states that while officiating as resident physician at the Medical College Hospital, Calcutta, he had unusual opportunities of seeing and treating cases of opium poisoning. He employed the treatment in nineteen cases, the following solutions being used:

No. 1 solution:

℞ Potass. permang., gr. x;
Acid. sulph. dil., ʒ ij;
Aq., O j.

As this does not keep well, the sulphuric acid has to be kept separately, and the quantities in the stock mixtures are so arranged that two drachms of the permanganate and two drachms of the sulphuric acid in concentrated solution, added to a pint of water, provide the proper amount for use.

No. 2 solution:

℞ Potass. permang., gr. ij;
Aq., O j.

This is also kept in a concentrated stock mixture, and, though used as here given, would probably have acted better if mixed with sulphuric acid like No. 1.

No. 3 solution:

℞ Potass. permang., gr. j;
Aq., ♏ xx.
For hypodermic injection.

At first the treatment was carried out as recommended by Dr. Moor (*British Medical Journal*, June 22, 1895)—namely, by introducing two or three strong acidulated permanganate solutions into the stomach at intervals, and afterward weaker solutions at intervals for some hours, to oxidize any morphine that might be re-excreted into the stomach. If was found, however, that these solutions, if allowed to escape through the stomach-tube, returned discolored, and as this indicated organic matter (or opium) remaining, it was soon decided to wash out the stomach with weaker permanganate solution until it returned pink; and the following instructions were finally issued to the house physicians regarding the use of the stock solutions:

1. Wash out stomach twice with plain water, keeping washings for chemical examiner.

2. Wash out stomach with No. 2 solution until washings come back pink, retaining the solution in the stomach one minute each time.

3. Then introduce No. 1 solution, and leave it in the stomach.

4. Repeat No. 1 solution twice, at intervals of half an hour.

5. Then give No. 2 solution every half-hour until complete recovery.

The ordinary stomach-pump tube has too

small eyes to allow of the contents of the stomach being thoroughly washed out, and it is better to use a tube entirely open at the stomach end—an ordinary half-inch drainage tube answers the purpose. A pump, by means of which the solution can be forcibly injected, is better for dislodging the adhering opium than an elevated funnel, which only causes a gentle stream to enter the stomach.

The amount of permanganate required depends, of course, upon the amount of drug taken. The washings must be continued until the solution returns pink. Experimentally it was found, when permanganate solution was added to opium in aqueous solution and shaken, that the mixture ceased to give any reaction with pure nitric acid after 1.25 parts of permanganate had been added (taking the opium present at one part by weight); it ceased to smell of opium after the addition of 3.5 parts, and to be discolored after 10 parts of permanganate had been added.

The general effect of permanganate of potash does not appear to be poisonous. No reference to it is to be found in text-books on toxicology. One cannot imagine it being absorbed as such, and the hydrated dioxide of manganese is non-poisonous. Locally it is an irritant, and, if in strong enough solution, an escharotic. In no case, however, were any signs found, either after recovery or on post-mortem examination, of its having caused inflammation of the gastric mucosa. Much decomposed permanganate (hydrated dioxide), but no trace of inflammation, was found on post-mortem examination at the site of hypodermic injections, while other cases that recovered after hypodermic injections showed no ill-effects. Vomiting after the introduction into the stomach of permanganate solution may be taken as a good sign, as it indicates a return of excitability in the gastric mucosa, and is only met with during recovery.

Dr. Moor states that permanganate decomposes morphine sulphate infinitely more rapidly than albuminous matter, and that it selects the former when both are present; and in opium poisoning he gives dilute sulphuric acid or white vinegar with the permanganate, on the ground that the insoluble morphine will be thereby at once converted into the soluble sulphate or acetate. This can hardly be the true rationale, however, as, while morphine acetate is very soluble in water (1 in 12) and spirit, morphine sulphate is only half as soluble in water (1 in 24, the same as the hydrochlorate) and but sparingly soluble in spirit; and the explanation, if it holds for the acetate, will not do so for the sulphate.

The truer explanation is probably to be found in Lauder Brunton's statement (taken from Stoluikow) that "the activity of morphine appears to depend on the presence of hydroxyl (HO) in it. When this is replaced by SO_4, its activity is greatly diminished." The antidotal power of permanganate—such as it is—is probably due still more, however, to the oxidation of the alkaloids. To quote Brunton again: "In the alkaloids produced from morphine by oxidation (oxy-dimorphine and oxy-morphine) their narcotic action is diminished without the convulsant action being increased." When given by the stomach with sulphuric acid, therefore, permanganate may be regarded as acting in three ways—(1) by substituting SO_4 for HO in the morphine present; (2) by oxidizing the morphine present; and (3) by mechanically washing out the opium present—and in his opinion its special value lies in that its discoloration (deoxidation) tells us readily whether any opium remains to be removed.

As regards hypodermic injection, Dr. Moor says: "While a part of the potash salt is reduced by the subcutaneous tissues, yet enough remains to find its way to the circulation to select the morphine out of the albuminous constituents of the blood." It is difficult to believe this is possible of a very readily deoxidized substance like permanganate of potassium, and the appearances in Dr. Maynard's post-mortems make it even less likely. What Brunton says of permanganate is quite applicable: "It very readily parts with its oxygen, and thus destroys completely the deadly power of the latter, and the mixture may be injected subcutaneously without any bad effects. When injected after the poison, however, it does not appear to come into such immediate contact with it in the tissues as to destroy it, and it therefore does not act as an antidote."

In considering the results of any mode of treatment of poisoning by opium (or by any other drug), statistics are practically useless unless extending over a considerable number of years. The quantity of poison taken, time elapsing before treatment, previous health of the patient, etc., all vary widely, and in each case must be judged alone.

The peculiarities of administration of the drug in different countries have also to be considered. In Western countries, where morphine is more often swallowed in solution

or injected hypodermically, and where the patients are more quickly brought to hospital, it is possible that the permanganate treatment may answer better. It might even be possible to inject the permanganate at the same spot in morphine-injection cases, as in Calmette's treatment of snake-bite with hypochlorite of lime, and perhaps with more success. But in the East, opium itself is most commonly swallowed, either alone in hard masses or intimately mixed with oil of various kinds, or spirits; the patient is frequently not treated until much of the poison has been absorbed (especially if it has been mixed with spirit), and when brought to hospital the difficulty of removing what remains is great, especially if it has been taken mixed with oil.

Surgeon-Major Gibbons, whose experience of opium-poisoning cases and their treatment by the classical methods is unique, and who made the post-mortem examinations in the fatal cases herein reported, informed the writer that he found no lumps of opium in any of those treated with permanganate, such as he frequently has found in those treated by the ordinary methods. On the other hand, he has among these latter met with cases showing no trace of opium in the stomach (in eighteen out of forty-four in 1893–94), so that more numerous post-mortem records are required to make it certain that the good results are really due to the use of permanganate.

For the reasons given it is unwise to draw any dogmatic conclusions from the results of Maynard's nineteen cases.

Fifteen of the cases were Hindus; 13 were males and 6 females; 14 were aged from eighteen to twenty-six years, and 2 mere babies; 10 were suicidal, and 9 accidental; 8 were opium-eaters. Six died, and in these cases the amount of opium varied from 16 to 360 grains. Three of the fatal cases were treated within two hours of taking the drug, and Case X, dying from sixteen grains, should probably be added to these three. Six deaths out of nineteen treated gives a mortality of 31.5 per cent., compared with a mortality of 35 per cent. met with in ninety-seven cases treated in the Medical College and Mayo Hospital during the year 1893.

To sum up, we may say that permanganate of potassium is a strictly local antidote; it can only act upon such opium as it comes into contact with in the stomach, and can have no effect upon what has already been absorbed. That it oxidizes morphine re-excreted into the stomach, does not affect this statement. The treatment is excellent as leading to thorough washing-out of the stomach, and at the same time affording a reliable indication when this is accomplished; but it is not to be expected that it will save life where a lethal quantity has already been absorbed into the circulation, nor can it be regarded as a physiological antidote to opium such as eserine is to atropine.

LUFF states that when the quantity of morphine that has been taken is known, the administration of a quantity of potassium permanganate slightly in excess of the morphine is useful. If it is laudanum that has been taken, and the quantity is known, six grains of potassium permanganate should be administered for each fluidounce of laudanum taken. If in any case the quantity of morphine or opium taken is unknown, from eight to ten grains of the permanganate should be administered, according to the severity of the symptoms.

It should be given dissolved in from four to eight ounces of water. The stomach should afterwards be washed out two or three times, at intervals of half an hour, with a weak solution of permanganate, in order to decompose the morphine that has been absorbed and that is being excreted into the stomach. In cases of poisoning by the hypodermic injection of morphine, he does not think the hypodermic injection of the permanganate would be of any use, but the washing out of the stomach with the weak solution of the permanganate should certainly be resorted to. In cases of threatened respiratory failure, strychnine or atropine (the former preferably) should be administered hypodermically in order to stimulate the respiratory centre, and artificial respiration should be resorted to if necessary.

CREOSOTE IN GONORRHEA.

ASMUS (*Meditzinskoie Obozrenie*, No. 10, 1896) reports fifty-eight male cases of acute gonorrhea successfully treated with injections of from two- to ten-per-mille emulsion of creosote. The discharge quickly decreased, became mucoid, and then ceased altogether. The patients recovered more rapidly than under the ordinary methods of treatment; complications developed but rarely, and no relapses occurred. In addition, creosote seemed to exercise an anesthetic action on the urethral mucous membrane.—*British Medical Journal*, July 11, 1896.

THE TREATMENT OF PRURITUS OF THE SCROTUM.

The *Journal de Médecine de Paris* of April 19, 1896, recommends the following:

℞ Picric acid, 4 grains;
Vaselin and lanolin, of each, ½ ounce.

Or,

℞ Picric acid, 15 grains;
Vaselin or lanolin, ½ ounce.

This preparation, it is said, will cure in a few days cases of pruritus of the scrotum that have lasted for years. Owing to the toxic properties of the picric acid, feeble applications are necessarily made, and two applications of the salve in one day are sufficient.

Attention is also called to the fact that picric acid in the strength of one to five parts to 1000 is useful in relieving the pain following burns, but that it must be used with caution.

CRITIQUE OF THE SERUM TREATMENT IN DIPHTHERIA.

Dr. P. BERNHEIM, of Berlin (*Therapeutische Monatshefte*, June, 1896), says there is no doubt that the question as to how far the mortality of diphtheria has been influenced by the treatment with Behring's serum is to be solved by statistics. Most of the statistics hitherto furnished are from hospitals, and, as Gottstein has repeatedly pointed out, are so full of sources of error that they cannot be relied upon to show whether or not the observed fall in mortality is due to the serum or to other and hitherto unknown processes. We can best get light on the subject if a large and in itself conclusive mass of cases, free from the sources of error urged by Gottstein, is sifted and arranged statistically. With this in mind, Bernheim draws upon his experiences for twenty years past.

In one table he gives the number of cases seen between April 1, 1876, and April 1, 1896. These cases are reported from accurate notes which he has of every case of diphtheria seen in private practice between 1876 and 1886; from 1886 on, his records from private practice are no longer complete, and are only conditionally valuable, the cases recorded not having been arranged according to years. Hence, from 1886 he has drawn his material from a large sick-benefit society to which belonged women and children. He mentions, however, that in private practice from 1886 to 1896 he had at least sixty-two cases of diphtheria, with nine deaths; from 1893 to April 1, 1896, there were sixteen cases and one death.

In all his cases the disease was clinical diphtheria—that is, only such cases are included as showed more or less extensive membrane clinging to the mucous membrane. Scarlet-fever diphtheria and all cases presenting the clinical picture of lacunar or follicular disease of the tonsils are not counted. No case was examined bacteriologically, and only one was treated with serum and cured. He has included among the dead a few who were sent to the hospital for tracheotomy and of whom he did not learn anything subsequently. Otherwise those who were sent to hospital are placed in the tables according to the issue of their cases.

Bernheim has also tabulated his cases of follicular tonsillitis observed during the same period. These cases vary in numbers according to the prevalence of diphtheria. Apparently the same causes which make the throat a good soil for the Loeffler bacillus make favorable conditions for the streptococcus.

Bernheim's first table shows that in twenty years he treated 352 cases, with a mortality of 19.9 per cent. If the sixty-two cases previously mentioned are included, the number becomes 414, and the percentage of mortality 19.3 per cent. The number of cases gradually increases from eight in 1876 to sixty-three in 1883, and then gradually falls again. Arranging the cases in periods, it is seen that from 1876 to 1880 there were 57 cases, with a mortality of 15, or 26.3 per cent.; from 1881 to 1886, 222 cases, with 46 deaths, or 20.5 per cent. mortality; from 1887 to 1896, 73 cases, 10 deaths, mortality 13.7 per cent. If in this period the 62 cases already referred to are added, the result is 135 cases, with a mortality of 14 per cent.

Therefore, in these twenty years there has been a fall in the mortality, independently of Behring's serum, of twelve per cent.

In table II the author arranges the cases in successive years from 1876 to 1896, 1877 to 1896, 1878 to 1896, and so on, showing that there has been a pretty steady decline in mortality from 19.9 per cent. to 7.7 per cent. in the period from 1893 to 1896. He accounts for this lessening mortality by saying that for eleven years there has been an absolute diminution in the number of the cases of diphtheria and in the intensity of the individual cases. He asserts that every one who has seen much of diphtheria during the period covered by his statistics must have noticed the lessening virulence of the disease.

Bernheim also asserts that the statements regarding the behavior of the symptoms under the serum treatment are full of contradictions: while one sees a rapid fall of temperature, another sees an excessive rise; one observer sees an acceleration, another a slowing, of the pulse; this observer reports a rapid casting off of the membrane, another denies that any change can be noted. Albuminuria, sudden heart-palsy, and other paralytic conditions are said not to be rare during convalescence (Drews). Engel-Bey (*Berliner Klin. Woch.*, 1895, p. 856) says: "Even among the seventeen fatal cases there was observed in twelve cases disappearance of the pseudomembrane, of the glandular swelling, of the fever, and in other ways more or less decided improvement." But Bernheim says that the older physicians used to regard these symptoms as very unfavorable. He concludes that no specific action has been shown by the remedy as yet, and he fears that a severe epidemic may completely destroy our hopes in it.

THE ACTION OF CAFFEINE ON BLOOD-PRESSURE.

VINCI, in the *Archivio di Farmacologische Terapeutica*, reports the results of a long series of experiments made in the pharmacological laboratory of Massina. He found that in dogs and rabbits the caffeine always produced a rise of arterial pressure very much like that produced by digitalis. In starving animals the rise of arterial pressure produced by caffeine was in direct proportion to the feebleness of the animal, but in all cases the action of the caffeine was prompt and persistent. He therefore offers a physiological explanation of the value of caffeine in disease of the heart where that organ lacks compensatory hypertrophy.

TREATMENT OF ERYSIPELAS WITH VASELIN.

KOESTER (*Therapeutische Monatshefte*, June, 1896) treats erysipelas in the following way: Vaselin is applied to the affected and surrounding parts twice a day; linen is laid over the vaselin, and a mask made if the part affected be the face. The dressing is held in place with gauze bandages. In other respects treatment is symptomatic—antifebrin or antipyrin for severe headache, and the same remedies or quinine when the temperature rises above 100°; ice-bags to the head, laxatives, chloral, digitalis, and alcoholics, as indicated. The advantages of this method are: it can be used even upon the hairy scalp; smarting, burning and disagreeable odors are avoided; and the remedy is cheap.

Koester has employed the vaselin treatment in 130 cases and claims that the results are just as good as with some other remedies. He goes into an elaborate comparison of the vaselin treatment with other methods, considering in this comparison (1) the general infection, especially shown by the temperature; (2) the local process; (3) and the complications.

As regards the fever, his table shows that of 218 cases not less than 205, or more than ninety per cent., were free from fever after six days' treatment, and 158, or more than seventy per cent., were free from fever after four days. This is a better showing than followed treatment with lead-water, ichthyol, corrosive sublimate and vaselin, and iodine.

As regards the second consideration, the local process, it appears that in thirty-six cases treated with lead-water there was further extension in 25 per cent.; in fifty-seven cases treated locally with iodine, extension occurred in 10.5 per cent; in twenty cases treated with ichthyol-vaselin, extension occurred in 35 per cent.; in sixteen cases treated with sublimate-lanolin, extension occurred in 12.5 per cent.; while in 128 cases treated with vaselin alone the percentage of cases in which further extension occurred was 24. Koester argues against the apparently very favorable showing for the iodine treatment; he thinks extension occurred oftener than the notes indicate.

As regards the third consideration, the occurrence of complications, the results were as follows: In four cases not subjected to any treatment, phlegmonous processes recurred in 4 per cent.; in thirty-five cases treated with lead-water, in 8.5 per cent.; in fifty-six cases treated with iodine painting, in 7 per cent.; in twenty with ichthyol-vaselin, in 20 per cent.; in sixteen treated with sublimate-lanolin, in 6.5 per cent.; and in 130 cases treated with vaselin the percentage of cases in which phlegmonous processes recurred was 11.5.

The author discusses the reason for the utility of vaselin, but reaches no conclusion, except, of course, that vaselin has no antiseptic properties.

He believes that the chief thing in the treatment of erysipelas is the treatment of the general condition of the patient. So long as his symptoms are insignificant, only regu

lation of his diet and maintenance of his strength are demanded. If the symptoms become more violent, the fever high, if delirium occur, or the strength lessen, then appropriate remedies should be given, and the result is generally favorable.

Koester does not claim this conception as new. On the contrary, he asserts that Trousseau, Vierordt and Strümpell hold the same opinion.

THE USE OF OXYGEN IN DIABETES.

In *Il Policlinico* Ascoli reports that he has obtained good results by using oxygen inhalations in diabetes. To a man sixty years of age he gave large quantities of the gas each day for a little over three months. During this time the quantity of urine diminished, its specific gravity decreased, the quantity of sugar was reduced to a small proportion and in two months entirely disappeared. Three months later the sugar had not reappeared, although the patient had gone back to a diet of starch foods. He had also gained greatly in weight.—*Revue Internationale Médecine et de Chirurgie*, April, 1896.

THE TREATMENT OF THE INSANITY OF PUBESCENCE.

Elliott says, in the *Medical Record* of July 18, 1896, that in the insanity of pubescence one glance at our patient suffices to suggest the first principle of treatment. Nature has failed to make an adult of this youth chiefly because of the irritated and exhausted condition of his nervous system. Remove the irritation, if possible, and repair the exhaustion. Place the patient in quiet, pleasant, and healthful surroundings, with plenty of sunshine. Ascertain if there be any tight prepuce, or phimosis, or short frenum, or congenitally small meatus urinarius, or vesical stone; any malformed clitoris, or pruritus vulvæ, or leucorrhea, or cystitis, which by their irritation not only may cause profound reflex effects, but also keep the unfortunate youth's mind on the generative organs and thus provoke vicious habit. Remember that this habit may be carried on without manipulation and may exist notwithstanding lack of evidence on physical examination, failure of the attendant to observe it, and denial of the patient. One patient of the writer's, seventeen years old, whom he brought through a severe attack of insanity, in whom no evidence of this habit could be found, afterward boasted that she had masturbated all through her sickness. To stop the habit, the removal of all provocations and careful watching are of the most service. Continuous exhibition of the bromide of potash, with the hydrobromate of hyoscine in small doses, seems to be of some use in alleviating sexual irritation.

To repair the emaciation in the milder cases, or after acute symptoms have passed by, the hot-spray bath twice or three times a week claims first attention for its soothing and stimulating effect. Exercise in the open air, with tonics, especially strychnine and arsenic, in small doses before meals, cod-liver oil in never more than teaspoonful doses, generous diet at absolutely regular intervals and consisting almost entirely of milk, hominy, potatoes, and bread, with meat in small quantities, regulation of the bowels, not too much restriction of the patient's actions, and very few sedative or hypnotic doses, seem to be the chief elements of good treatment in these cases.

In delirious cases, and others refusing food and medicine, resort must be had at once to the stomach-tube. By this means not only may be administered medicine, but also that generous supply of food which is necessary to repair the extraordinary tissue-waste, and which of itself is often more calmative than any remedy. The staple articles to be given are milk and eggs, and occasionally broth or peptonoids. In cases in which the excitement is not very great, a pint of milk, with two eggs, and two teaspoonfuls of whiskey, if there is any tendency to the typhoid condition, given three or four times a day, will usually be found sufficient. If the excitement is very great, and there is excessive muscular activity, these amounts may be considerably increased. The author has given four pints of milk so thick that it would just pass through the tube, twelve eggs, one ounce of butter, and other necessary additions, to a patient every day for weeks, yet diarrhea was not set up, and only one or two feedings were rejected by vomiting. His patient lived and recovered her mind. In stuporous or cataleptic conditions the amounts must be much less, or fatal diarrhea may result. Ten drops of dilute hydrochloric acid added to each feeding will be of service. These patients should be kept in quiet surroundings but not left alone; they should be allowed to roam about practically unrestrained, encouraged to sleep at any time, and their noise should be put up with. If they go forty-eight hours absolutely

without sleep, one-eightieth of a grain of hydrobromate of hyoscine with one-fifth of a grain of morphine will usually secure a few hours' rest.

And here a word about the alkaloids of hyoscyamus. Hyoscyamus should not be used, hyoscine being more effectual and safer because less stupefying and depressing. Although not well borne by young or agitated persons, yet, if it becomes expedient to put an end to an attack of frenzy or to enforce sleep, this drug, either alone or in combination with morphine, is the best means at our disposal. For this purpose, at least one-sixtieth of a grain should be given hypodermically, smaller doses usually making the patient worse. Great dryness of the throat, leading the patient to believe he has been poisoned, headache, and dilatation of the pupils, muscular prostration, the production of hallucinations or increase in the intensity of those already in existence, and a general feeling of unrest, are some of the disagreeable after-effects of its first administration. A few patients, however, soon learn to like the sensation it produces, and in these cases it is a very valuable remedy, calming the convulsions, securing sleep, depressing the sexual organs, stimulating the kidneys, and certainly not interfering with the action of the stomach or bowels. Others, again, after its administration, pass rapidly into a sort of delirium with intense restlessness, weak and rapid pulse, flushing of the skin, and wide dilatation of the pupils; if sleep follows, it is short and unrefreshing, and the patient wakes in a worse condition than before. These effects, however, more rarely follow the hyoscine and morphine combination referred to above. Before resorting to such powerful medication to procure sleep, all the simpler means should be tried. A hot bath, or a glass of hot milk to which has been added a tablespoonful of whiskey, sometimes proves effectual. The author thinks physicians often get too anxious about this matter and employ hypnotics which sometimes do more harm than the insomnia. Especially is the routine use of chloral to be condemned. In most cases natural sleep will come unbidden, unless in the meantime the physician yields to the temptation to give his patient some powerful sedative for the sake of somebody else. In the treatment of very many of these cases the highest skill is patience.

The term "insanity of pubescence" has been used in this paper to include the aggregate of pure insanities occurring in youth. Elliott points out the difficulty encountered in classifying these forms according to present methods, and expresses the conviction that there is no form of insanity so intrinsically connected with, or so essentially arising out of, the pubescence itself, as to be well named after it; he ventures the opinion that when alienists shall have discovered a rational basis of classification, very little of our present nomenclature will pass muster.

THE ELIMINATION BY THE STOMACH OF MEDICINAL SUBSTANCES INTRODUCED BY MEANS OF HYPODERMIC OR RECTAL INJECTIONS.

BOUGERS, using vigorous dogs and examining the contents of their stomachs, obtained by vomiting or by lavage, finds that many more substances are eliminated by the gastric mucous membrane than has generally been supposed. Morphine, brucine, caffeine and quinine have thus been found; salicylic acid and antipyrin also, but not carbolic acid. It is, therefore, wise, in cases of poisoning by any of the alkaloids named, to see that the stomach is washed out to prevent repeated poisoning.—*Revue Internationale Médecine et de Chirurgie*, April, 1896.

TREATMENT OF ACUTE ARTICULAR, CHRONIC, AND MUSCULAR RHEUMATISM.

In the *American Practitioner and News* of July 11, 1896, BAKER describes the various plans for anti-rheumatic treatment. Blistering has few adherents at the present day, unless in those exasperating cases which have stubbornly resisted every other line of treatment. Ichthyol (25 to 100 per cent.) rubbed into the affected joints has seemed to relieve pain without causing irritation. The writer's preference is for a mixture of salol, ether, and collodion—of the first two, a drachm each, to an ounce of the latter—painted on the affected joints twice or oftener daily; this has certainly resulted in relief of pain, even if no permanent benefit ensued.

Since 1875 very little that is new or valuable regarding the treatment of the various grades of rheumatism has been presented. The salicylates and alkaline salts, aided by salol and phenacetin, continue to hold the leading place in the treatment of acute and subacute cases. Baker's own preference is for the sodium salicylate; he believes it is

not only more palatable and less liable to disorder the stomach, but also exerts a more prompt and decided action than salicylic acid. To an adult he administers ten to twenty grains every two to four hours until the desired effects are obtained, or until tinnitus is induced, after which he either lessens the dose or substitutes salicin. Given in this way, this drug will, in a great majority of cases, relieve pain after four to six doses, reduce fever, and cause the local swelling to subside in from sixteen to forty-eight hours. Oil of gaultheria, salol, salophen and allied products depend for their action upon the salicyl elements contained, and he has yet to see where either in safety, palatability or efficacy they are equal to the sodium salts. In the chronic and muscular forms of the disease the salicylates are not so reliable, but at the actively inflammatory periods and exacerbations they are not only useful, but indispensable. Quinine in the early stages is of benefit in controlling the pyrexia and thereby rendering the patient more comfortable, but has no specific action on the disease. Antipyrin, acetanilid and phenacetin will relieve pain and reduce fever, but have no action beyond their antipyretic and analgesic effects. Benzoic acid has been recommended, but even its adherents claim for it no superiority over the salicylates. Good results are claimed from an injection of carbolic acid (ten-per-cent.) into the painful joints; the writer has not tried this. Iodide of potassium, alone or in combination with the salicylates, is of undoubted benefit in the chronic forms. Quinine given with iodide of potassium will yield gratifying results in cases where the pain is worst at night. Colchicum, aconite and guaiacum are not much used, but Baker thinks that colchicum would be of unquestionable service in old chronic cases where the joint changes are allied in nature to those which take place in gout.

The general health of the patient should be carefully considered, and, if necessary, tonics, such as cod-liver oil, arsenic, iron, and strychnine, should be employed to increase the resisting power of the tissues to the disease.

In the treatment of muscular rheumatism the only indications are to counteract the diathetic condition and to relieve pain. Patients subject to muscular rheumatism should carefully observe the laws of hygiene. Drugs have no specific action upon the disease, nor do they shorten its duration. Salicylates produce not the slightest benefit unless the muscular trouble is complicated with joint affections. Massage if persevered in is of unquestionable service. For the relief of pain, the writer has seldom found it necessary to resort to opium.

In conclusion he states that in acute cases the salicylates will cure a larger number in fewer days than any other known mode of treatment; in chronic cases they are unquestionably serviceable, either alone or in combination with other drugs. While the salicylates neither prevent nor ameliorate the cardiac complication (except by lessening the number of days the patient is exposed), they certainly do not produce nor aggravate this complication. Under the salicylate treatment relapses are not so frequent as after other modes of treatment, provided the drug is not suspended too suddenly after the cessation of the pyrexia and articular symptoms. In uncomplicated myalgia the salicylates render little or no benefit. As from fifty to sixty per cent. of all cases of rheumatism are attended by cardiac complications, the proper protection of the heart is the most important indication to be fulfilled.

PREPARATIONS OF STROPHANTHUS.

In the *American Journal of Pharmacy* for July, 1896, WOOD and CARTER give the results of their studies as to the effects of strophanthin, with the object of determining whether this active principle represents in its action that of the crude drug. They think their experiments are sufficient to show that the commercial strophanthin, as put upon the market by manufacturers of the first class, is an extremely active substance. As long ago as 1888, Rothziegel and Koralzewski reported the results of the use of strophanthin in forty-four cases of disease: the influence of very small doses, 0.0002 to 0.0003 gramme, was distinctly perceptible in an increase of the force of the pulse in from five to ten minutes, but usually in cardiac cases the disappearance of the irregularity of the heart's action was not perceived until the second or third day of treatment; when there was dyspnea from cardiac disease, the difficulty in breathing disappeared very rapidly. No local irritation was, in their experience, produced by the hypodermic injections of as much as five decimilligrammes of the strophanthin. They ordinarily gave from one to three milligrammes in the twenty-four hours; in one case they gave five milligrammes for eight days without any bad

results. In two cases, however, the daily use of three milligrammes for two weeks caused reduction of the pulse-rate to 48 per minute, without any other accompanying symptoms. They reached the conclusion that strophanthin was a good substitute for tincture of strophanthus.

Wood's and Carter's experiments show that the activity of the strophanthin itself is much more marked in raising the arterial pressure than that of the extract, so that confirmation is afforded of the conclusion of Rothziegel and Koralzewski, *i.e.*, that strophanthin is a superior preparation of the drug.

The authors believe, therefore, that the Pharmacopœia should recognize the active principle of strophanthus and give appropriate tests for its purity.

ACUTE OTITIS MEDIA.

Dr. MUZZY, in the *New York Medical Journal* of July 4, 1896, concludes an article on this topic as follows:

In treatment, the first point is the pain. The more acute, however severe, the more sure will be the benefit from leeching, whether with the natural or artificial leech. The artificial is applied more speedily, draws more steadily, creates more surface irritation, and is comparatively clean. Next to leeching comes heat—dry, moist, or liquid: hot water injected slowly and gently; hot meal, sand, or the Japanese hot box. Try the dry form of heat first. The employment of laudanum or other anodynes is useless and wastes precious time. Cathartics as derivatives, mercurial or saline, should be used early. Many of the best authorities speak of puncture of the drum, a very valuable procedure: close watch should be kept, and this incision be made as soon as the inflammation bulges the membrane in a definite portion. But if your patient is a sensitive child, with an ear exquisitely tender, and with much swelling of the external canal, it will be far safer, and just as effective, to rely on leeches, heat, and cathartics. Beware of stabbing in the dark: don't forget the proximity of the internal carotid, and that it has been punctured in some cases. If in an adult you have punctured the drum, and matter only presents without extruding, inflation by the Politzer apparatus will assist to remove the pus.

After-treatment—that is, after disappearance of pain—consists in cleansing and the use of astringents, pure fifteen-volume peroxide, followed by a swab of alcohol, and dusting or even a heavy coating of powdered borax, but never a filling of the canal, as was recently much in vogue.

The inflammatory process may at any time spread to the mastoid cells. This is heralded by an increase in the severity of all the symptoms: the pain that had gone down or disappeared reasserts itself and spreads over the side of the head, and changes in character; the discharges may in a few hours disappear altogether; swelling over the mastoid takes place (though this is uncertain). Tenderness to light tapping or firm deep pressure by the finger is a safe but not infallible guide to indicate the presence of inflammation of the mastoid cells.

THE NON-MEDICAL TREATMENT OF PNEUMONIA IN CHILDREN.

The *New York Medical Journal* of April 11, 1896, gives an excellent editorial summary of the treatment of pneumonia in childhood, which it takes from the April number of that excellent journal, the *Archives of Pædiatrics*, which contains a notable series of six articles on the treatment of pneumonia in children, all by hospital physicians. The disease is treated of in its various forms, and the entire treatment receives consideration, but the *Journal* restricts itself in this summary to the accessory treatment, referring its readers to the *Archives* for what the authors have to say concerning the use of drugs.

The first article, entitled "The Method of Treating Pneumonia at St. Mary's Free Hospital for Children, New York," by Dr. George Montague Swift, is a paper read at the March meeting of the New York Clinical Society. Dr. Swift says that cases in which the physical signs are those of bronchitis, but in which the children appear unusually sick and have a temperature ranging above 102.5° in the axilla or in the groin, are regarded as probably cases of broncho-pneumonia and are treated accordingly. The plan in the treatment of these cases is to put the children in a room warmed to 75° F. or above, to keep a kettle of water boiling in the room, and on the kettle to keep a vessel of beechwood creosote or pine-needle oil, care being taken that the creosote does not boil down and become too pungent. The combination of warmth, steam, and evaporating creosote makes a soft, agreeable atmosphere which is most soothing to the inflamed and irritated bronchial mucous membrane. A child which has been coughing violently and frequently, says Dr. Swift, when

placed in such surroundings quiets down and coughs but rarely. One seldom needs cough syrups or expectorants in such an environment. The children with lobar pneumonia are kept in the well lighted, well ventilated wards of the hospital; some do better if they are removed to such a warm, moist atmosphere as was mentioned in connection with broncho-pneumonia. The oil-skin jacket is no longer used, but flaxseed poultices are applied for relief of pain. The use of an ice-bag for the same purpose has not as yet become common; in the cases in which it has been employed the result has been satisfactory.

In the second article, on "The Treatment of Pneumonia in the Babies' Hospital, New York," Dr. L. Emmett Holt says the pneumonia patients are kept in a ward by themselves, with never less than 1000 and usually 1200 cubic feet of air allowed to each bed. The temperature of the ward is kept as nearly as possible at 70° F., and, in addition to as good ventilation as possible, the children are removed from the ward at least once a day to allow a thorough airing. Great attention is given to the feeding of these infants, as experience has shown that the worst thing to be feared is the slow failure of nutrition from disturbances of digestion, with vomiting or diarrhea, but sometimes occurring without either. The food is always considerably diluted, although the regular hours of feeding are maintained. Water is given freely between feedings, usually combined with stimulants. For the youngest infants, partly peptonized milk is the chief reliance. It has been found much easier to prevent disturbances of digestion by careful feeding at the outset than to control them when they have occurred. In connection with feeding, close attention is given to the bowels, particularly to avoid distention of the colon with gas, which is often found to produce attacks of cyanosis and sometimes even convulsions from the pressure upon the lungs. Wherever there is a disposition to much fermentation in the colon, the bowel is emptied once a day by irrigation. The general plan of treatment is to use as few drugs as possible, reserving the stomach for food and stimulants and relying upon external measures or applications to control special symptoms. Much reliance is placed upon counter-irritation and inhalations. Counter-irritation is made with a paste of one part of mustard and six parts of flour, which is made to encircle the chest. It is left on only long enough to redden the skin—*i.e.*, five or six minutes—and the application is repeated from three to eight times a day, according to circumstances. It has been found particularly useful where the bronchitic element is prominent. Poultices have been practically discarded. Inhalations are used systematically in all cases, usually every three or four hours. For this purpose the child is placed in a closed tent into which steam is introduced from a croup kettle. The cases of lobar pneumonia are managed on much the same general plan, but counter-irritation is not used unless there is much pleurisy.

The third article, on "The Treatment of Pneumonia in the Children's Hospital, Philadelphia," is by Dr. J. P. Crozer Griffith. He tells us that every patient with pneumonia receives a warm tub-bath at the outset, if the general condition permits of it. If not, he is sponged. He is then confined absolutely to bed. Circumstances do not allow the pneumonic children with meningitis symptoms to be isolated, as would be desirable for the sake of mental rest; consequently all the cases, with occasional exceptions, are treated in the general wards. On the theory that croupous pneumonia, and probably broncho-pneumonia as well, is an infectious disease, no abortive or specific plan of treatment is attempted. Fever of moderate degree is not looked upon as of special import in pneumonia. Should it reach 104° or over, sponging with water of 70° to 80° is often employed, or a warm tub-bath is given. If the temperature of the child is still higher, or the means used do not prove effectual, the temperature of the water is reduced, or a cool tub-bath is given, but this is seldom necessary. Dr. Griffith's own feeling is that the fever *per se* can generally be disregarded, and it is rather the nervous symptoms which may accompany it that require treatment. Should great restlessness, insomnia, delirium, or convulsive movements appear to depend on the existence of fever, he endeavors to reduce this, independently of its degree. He has found that when the respiration is becoming much embarrassed, the heart failing, and the general strength waning, as it is especially apt to do in broncho-pneumonia, a plunge for from one to three minutes into a bath of 103° to 105° will often rouse the failing powers in a remarkable manner. In the use of the cotton jacket the practice differs. His colleagues constantly employ it. He formerly did, but does so no longer. He has never been able to see that it did any good or rendered the child more comfortable, but

appeared to make it less so. To employ it to prevent "taking cold" seems to him irrational. For the same reason, he says, we should swathe the entire body in cotton, for it is not the part exposed to chilling which suffers. Jacket poultices are only occasionally used by any of the staff, and by some not at all. When there is much dyspnea or pain, a hot light poultice sometimes gives great relief, but Dr. Griffith thinks that the indication for it seldom arises. Counter-irritation is used occasionally, oftenest in the form of turpentine stupes to relieve pain. Dr. Griffith is in the habit of employing friction with turpentine also, or, preferably, with amber oil, in some cases of broncho-pneumonia, to relieve the attendant bronchitis, provided the rubbing does not exhaust the child.

In the fourth article, entitled "The Treatment of Pneumonia in the Children's Hospital, Boston," by Dr. E. M. Buckingham, we learn that pneumonia patients are placed in the open wards with other patients, unless there is some special reason to the contrary. They therefore have a freer air than can always be secured in small rooms. Great care is taken to keep the air fresh and comfortably warmed, and in winter there is generally an open fire burning in the ward. As a rule the medical wards are somewhat quieter than the surgical wards, in which last there are less likely to be children who can be injured by noise. Patients are supplied with light but warm clothing. Dr. Buckingham does not know that he ever saw a poultice used in the hospital, and the use of the cotton-wool jacket is not at all common. Perhaps of late years it has not been used at all. Care is habitually taken that the child shall have food suited to its age and condition. With a high temperature the food is probably always liquid, and is commonly milk, either clear or variously modified.

From the fifth article, on "The Treatment of Pneumonia in the New York Foundling Hospital," by Dr. W. P. Northrup, we learn that in broncho-pneumonia of moderate extent and not following measles, whooping-cough, diphtheria, or influenza, the treatment is mostly symptomatic. For pain, localized, intermittent poulticing is employed. The poultice is made of English mustard mixed with cold water, one part, stirred into boiled flaxseed, three or four parts. The poultice is made up thin and large enough to cover the whole back of the thorax or the whole front or either side, as may be desired. This is kept on till the skin is well reddened. The poultice is then slipped out and a hot dry flannel is slipped under the clothes (or padded vest) to replace it. High temperature which manifests itself in cerebral symptoms —such as stupor, delirium, or great restlessness—not so much reliance being placed upon the thermometer as upon the symptom, is to be relieved by baths. Sponging with warm water and alcohol, followed by fanning, cools the skin well. Immersion in water at 90° for from seven to fifteen minutes, with constant rubbing, is also employed. In all cases attention is paid to keeping the feet warm. In pleuro-pneumonia, counter-irritation is employed to clear up pleural dullness, iodine being applied to a point just short of blistering.

The final article of the series, by Dr. Samuel S. Adams, is entitled "The Treatment of Pneumonia in the Children's Hospital, Washington, D. C." In croupous pneumonia, he says, absolute rest in bed is enjoined and great discretion is exercised in disturbing the patient for physical examinations. Frequent examinations of the chest are avoided, thereby saving extra labor to the overworked heart. If the pneumonic area is mapped out at first, and there is no reason to believe the inflammation has extended, nothing is said to be gained by overzealous investigations; on the contrary, change of posture for purposes of auscultation and percussion will frequently tax the patient's strength and may induce syncope. The diet is restricted to milk or animal broths in suitable quantities, and food is given every two hours during the day and every three hours at night. Cool water is also given at frequent intervals, but cracked ice is forbidden. The cotton jacket, with or without oiled silk, is worn throughout the attack. If there is acute pain with surface congestion, dry cups are applied over the inflamed area, followed by hot poultices and a jacket. The management of the fever depends very much upon its nervous manifestations. If the temperature does not exceed 104° F., with a daily range of one or two degrees, and there are no evidences of cerebral irritation, no measures are taken to reduce it; but if it remains continuously high and is attended with delirium or coma, Dr. Adams depends upon frequent sponging with alcohol and tepid water, or the graduated cold bath. Neither he nor his colleague has used the cold pack or the ice poultice. In some cases, he says, the graduated bath alone keeps the temperature within safe limits, con-

trols the delirium, and stimulates the heart. In broncho-pneumonia, the general plan of treatment is much the same; most cases are so slight as to call for little more than rest in bed, a liquid diet, and the cotton jacket. If the inflammation extends to considerable areas, more active measures are pursued. Counter-irritation is produced by mustard pastes, turpentine stupes, or camphorated oil applied to the chest, but never to the extent of blistering. Hot flaxseed-meal poultices are indicated when the pulmonary congestion is intense or general. In hypostatic pneumonia, frequent changes of posture enter into the treatment.

TOO MUCH AND TOO LITTLE HAIR.

JACKSON (*Medical News*, July 11, 1896) states that if there is any scaling or crusting on the scalp showing the presence of a pityriasis or seborrhea, our first duty is to deal with it. Do not make the mistake of prescribing cantharides at once because there is falling of the hair. To some physicians, falling of the hair always suggests cantharides, just as to other physicians any skin trouble suggests arsenic. If there is much crusting, it is well to soak the scalp over night in sweet oil, with two per cent. of salicylic acid, and to wash the hair and scalp the following morning. Then in these cases, or without the preliminary soaking in other cases, apply the chosen remedial agent. There are many who prefer resorcin, three to five per cent. in alcohol and water. The writer has tried this, both on himself and on his patients, and does not like it. It is, in his opinion, only fitted for those cases in which there is an oily seborrhea present. In the other forms it is apt to prove too drying to the scalp, and to increase the itching. If one tries to use a slightly oily fluid preparation of this or other drug, it is not much better. In his experience, though fluid preparations are easier to apply, they are not as much under control as pomades, and are prone to make the hair stringy and generally disagreeable.

After making trial of a great many different drugs and combinations in the treatment of the scalp, he has settled down to two formulas, namely: Sulphur cream, and Bronson's ointment. These give him such satisfaction that he employs the one or the other in the great majority of his cases of alopecia pityroides. His preference is for the sulphur cream. This is composed of:

℞ Ceræ albæ, ʒ vij;
Ol. petrolate, ℥ v;
Aquæ rosæ, ℥ iiss;
Sodæ biborat., gr. xxxvj;
Sulphur, ʒ vij.
Mix.

This he uses whenever he can. As after a time there is a slight odor of sulphur about the head of one using this preparation, it is not well to prescribe it for physicians or teachers, or those following any pursuit in which others are liable to detect such an odor. In such cases, and in those in which sulphur does not agree, Bronson's ointment is an elegant and efficient substitute. It is composed as follows:

℞ Hydrarg. ammon., ℈ j–ij;
Hydrarg. chlor. mitis, ℈ ij–iv;
Vaselin, ℥ j.
Mix.

It is frequently said that ointments are objectionable and that patients will not use them because they make the hair so greasy. That is quite true if one uses a thick ointment and uses it too freely. But if one of the ointments here given is used, and the patient be instructed to dip the end of the finger lightly into the ointment and then to rub the small particle of ointment thus taken thoroughly into the scalp, and not to smear it on the hair, there will be no complaint. It is always best to have the ointment put on by a second person, but if this is impracticable the patient must be told to lay the hair in a part and to rub the ointment into the part, and so go over the scalp. Of course this takes time, but it need not be done every day. After the ointment is applied, the hair is to be brushed to spread the ointment still more. The application is to be repeated once a day, every other day, or only once or twice a week, according to the nature of the case. It is remarkable how much more comfortable the scalp feels after the use of one of the ointments. Persistently used, the seborrhea will be cured in most cases. It must be borne in mind that it will probably relapse, and the patient should be so told, and instructed to keep by him the ointment so that he may attack the disease as soon as it appears.

The other diseases of the scalp that tend to produce baldness are so few that the writer does not speak of them.

Apart from the treatment of the disease of the scalp that may be present, he believes there is but one other remedy worthy to be spoken of, and that is massage. It is absurd to use so-called "hair tonics," which, in most

instances, are but more or less strong solutions of cantharides. If we use this irritant strong enough to cause anything but the most fugitive effect on the scalp, we are apt to set up inflammation. And if we use weak solutions and produce only a slight and fugitive irritation, what good is it? Vaunted hair-tonics make their reputations very largely in cases of transient fall of the hair after fevers, and in women, in whom the hair is apt to fall out and to grow again. Most of these cases in time would regain the hair without any so-called "tonic." But a certain amount of good is done by the tonics in keeping the scalp clean, and it is probable that the rubbing of them into the scalp acts as massage does. In cases in which the hair is really falling out in a vicious way, and in most cases of premature baldness in men, they are, in the writer's judgment and experience, of little value.

Massage, on the other hand, is the model method for increasing the nutrition of the hair. It does this by increasing the flow of blood, not only in the superficial vessels but also in the deep ones. We know that the hair papillæ receive their blood-supply from the deep blood-vessels that give off little arterial twigs to them. If now we increase the amount of blood flowing through the deep vessels, we also encourage the blood-supply to the papillæ, and so stimulate the growth of hair. We also accomplish another important thing, which is the loosening of the scalp. In men who are growing bald you will find that the scalp becomes progressively more and more drawn down upon the underlying bones. An atrophy of the skin is in progress. Now the application of all the local stimulants in the world will not cause the scalp to loosen. But massage will, and this very thing will greatly aid us in our endeavor to get the hair to grow. It may not cause new hair to grow, and it may not permanently stop the progress of the atrophy, but it will at least stay its onward course, and in so much delay the appearance of baldness. Believing that this reasoning is right, the writer long ago adopted massage as the essential part of the treatment of all cases of loss of hair that were not evidently and without doubt due to some passing and readily curable disease of the scalp. In his own practice he makes use of a skilled operator when the patient can afford to employ one. Otherwise he directs him to pinch up and roll his scalp between the fingers of his two hands. Happily, theory and practice run together in this matter, and the writer has had the satisfaction of seeing a number of cases greatly improved by the use of massage.

EFFECTS OF ATROPINE ON RESPIRATION.

UNVERRICHT (*Berliner Klin. Woch.*, June 15 and 22, 1896) draws attention to the harmful effects of atropine upon the respiration. He observes that the results of treatment by antagonists, such as morphine poisoning by atropine, have been only moderate. It is incorrect to assume that the respiration is improved because it becomes more rapid. The author's investigations have shown that there is no antagonism between morphine and atropine as far as the respiration is concerned. Atropine can produce Cheyne-Stokes breathing, and an agent which can call forth this phenomenon cannot be looked upon as a respiratory stimulant. Both morphine and atropine can produce in man breathing of the Cheyne-Stokes type. Orlowski has made abundant experiments in the author's laboratory upon the action of atropine on the respiratory centres. Dogs can bear doses of atropine which the human subject cannot. From the experiments it is shown that after the first injection of atropine the volume of the breathing is diminished, and that a further diminution is noted after a second injection. Eventually the volume may be increased just before general convulsions show the exhaustion of the nervous centres. Thus this increase is a manifestation occurring shortly before death. The frequency of the respiration showed generally a striking constancy. When increase in the volume of the breathing occurs, this can only be due to alteration in the depth of the breathing.

The author then relates his investigations into three cases of atropine poisoning. All three cases recovered, and the only symptom which caused any anxiety was the severe disturbance of the mechanism of respiration. These cases show how little atropine can be looked upon as a respiratory stimulant. In one case one centigramme of atropine sufficed to produce severe respiratory difficulty. The objection that smaller doses, of two to four milligrammes, act favorably on the respiratory centres, is theoretical and not proved. The author refers to recorded cases of atropine poisoning in which severe respiratory disturbance had been produced. He concludes that atropine is not a respiratory stim-

ulant, that even in small doses it produces an unfavorable action on the respiratory centres, and that in severe cases of morphine poisoning it is not to be recommended.—*British Medical Journal*, July 11, 1896.

ACETANILID AS A SURGICAL DRESSING.

WIBLE, of Munhall, Penn., writes of this use of acetanilid in the *Pittsburgh Medical Review* for May, 1896. The author's experience with the drug has been principally in the different classes of wounds, burns and scalds, and amputations, and he has found it not only equal, but superior in every respect, to iodoform. Dr. Allen, surgeon to the Samaritan Hospital, Philadelphia, says that acetanilid locally is like quinine internally, good for almost anything. It can be applied topically in powder; in ointment, using anhydrous wool fat or petrolatum molle as its base, in the strength of from five to sixty grains to the ounce of base; in solution in alcohol, in which form it is conveniently used in erythematous conditions of the skin; and also in the form of gauze, which is made in the same manner as iodoform and bichloride gauzes, and used to dress, pack, or drain wounds and sinuses. When used in the powder form, it should be finely rubbed in a mortar; this will give it more body, and it will then better cover and adhere to a wound.

It also has some hemostatic properties, is strongly antiseptic, desiccant, anesthetic, and analgesic.

When applied to a fresh wound, in powder form, it will combine with the wound secretions and form a thin scab, under which repair rapidly progresses. The slight burning sensation caused by the powder when applied to a wound ceases in a very brief time, and is then succeeded by its anesthetic and analgesic effect.

The powder does not adhere, or cause the gauze dressings to adhere, so tenaciously as iodoform does; but if there has been much secretion of blood or serum from the wound, and it dries thereon, thus causing the dressings to adhere, they can readily be loosened by applying alcohol, which dissolves the acetanilid, allowing the dressings to fall off, which they do in the majority of instances immediately upon removal of the bandage and without the application of water or alcohol.

Acetanilid has many advantages over iodoform, and no disadvantages whatever. Nothing derogatory has been said against its use, except its poisonous effects when absorbed through a wound; but this will never occur if a little common sense is practiced. Only where an extensive denuded surface is exposed, as particularly in burns and scalds, is there liability to the supervention of toxic symptoms, and when such cases present themselves the only precaution necessary is to dust the acetanilid lightly, if used in the powder form, and if used with an oily base to use a less percentage of acetanilid than would be advisable in a denuded surface of smaller extent.

Wible employed acetanilid ointment, thirty grains to the ounce of base, to dress a child one year old, who had sustained scalds of the entire left arm and shoulder, extending up to the chin and down over the chest to the waist. The child was dressed once every twenty-four hours. No toxic symptoms developed, and the application of the ointment evidently was painless and soothing, for the little patient would hold out its arm to have the dressings applied.

Rook, of Quincy, Ill., reports two cases of acetanilid poisoning, one terminating fatally, and hence concludes that the drug is a dangerous topical application in new-born infants; but he used it to excess. Thus, to a babe four days old, suffering with an erythematous inflammation of the skin of the nates, thighs, and groins, he applied four times during an afternoon a powder composed of equal parts of acetanilid and bismuth subnitrate; on the following morning the babe was found cyanosed, and shortly afterwards died. That the babe died from the absorption of the acetanilid cannot well be gainsaid, but who would think of applying any active remedy almost every hour to a babe not a hundred hours old? This physician's other case was similar to the one mentioned: the babe was but two days old; one application was made; the following morning this babe was also deeply cyanosed; the application was stopped, and in twenty-four hours full recovery from the toxic effects occurred.

In the January number of the *Yale Medical Journal* is reported a case: A girl, aged eighteen years, was suffering from a suppurating ulcer, resulting from a burn of a large part of the hand. Powdered acetanilid was applied every four hours for twenty-four hours, when symptoms of cyanosis occurred. The drug was immediately discontinued, and in twelve hours all symptoms disappeared. Dressing the wound every four hours was uncalled-for and unnecessary. By dressing

it once in twenty-four hours the desired result would have been obtained, namely, the prevention of pus-formation, and the unfortunate toxic effects would not have supervened.

Dr. Wood, of the United States Army, in a paper read before the Surgical Section of the San Francisco meeting of the American Medical Association, recommended acetanilid as a cheap, non-irritating, non-poisonous, and inodorous surgical dressing. The cost is about one-fifth that of iodoform.

It acts very satisfactorily as a desiccant in abrasions, burns, and scalds, preventing serous oozing, which is annoying in the way of soiling the dressings, etc.

If a wound, traumatic or surgical, be dressed first with strict regard to antiseptic precautions and then with acetanilid as a dusting powder, acetanilid gauze, absorbent cotton, and roller bandage, there will remain afterward a perfectly dry and rapidly healing wound. The author has used it in retarded healing of the umbilicus, in which there is usually more or less serous oozing, with very satisfactory results. Dr. Wells, of Philadelphia, reports that he is much pleased with the action of acetanilid, combined with starch powder, for the same condition.

Upon chancroids the effect of acetanilid is probably more gratifying to both physician and patient than any other substance. The wound-secretion and pus-formation are almost immediately checked, and healing rapidly progresses under a dry scab in from one to seven days. The method of application is simply rubbing the dry powder into the ulcers. Patients are especially thankful when treated thus, on account of the entire absence of odor and the ease and simplicity of the method of treatment.

Crush-wounds of the extremities, where dust, dirt and grease are ground into the lacerated tissues, and it is impossible to wash out all the foreign matter with antiseptic solutions, have been found by the author to heal generally without suppuration when dressed with acetanilid.

PYLEPHLEBITIS SUPPURATIVA.

MYNTER, after reporting a case of suppurative pylephlebitis complicating operation in a case of gangrenous appendicitis, thus quotes from Ziemssen (*International Journal of Surgery*, April, 1896):

Thrombosis of the portal system is of comparatively frequent occurrence, dependent upon marasmus with weak heart, or compression of the portal vein or its branches in the liver, as in cirrhosis, or tumors or cicatricial retraction of new tissue. Textural changes in the wall of the vein itself are necessary in order to produce phlebitis, and this disease is much more rarely met with. It is, therefore, generally secondary to suppurating processes in the abdomen, an inflammation spreading to the portal vein or its branches and producing purulent infiltration in the wall, resulting in thrombosis, the thrombi then undergoing purulent softening and the vena porta appearing filled with pus.

The etiology of this rare disease is well known. It may occur in any age, even in earliest childhood, when it may start in the umbilical vein after ligation of the navel, due either to trauma or infection. Most cases, however, depend upon ulcerative processes around the radicles of the portal vein, which involve the wall of the vein, produce phlebitis and consecutive thrombosis, which spreads upwards along the vein or by embolus, in either case producing a thrombo-embolic pyemia of the portal system.

Appendicitis forms the most frequent cause, through infection of a mesenteric vein, when the mesentery or omentum is adherent and agglutinated to the gangrenous appendix. The cause may, however, be found in gastric and intestinal ulcers, in phlebitis in the hemorrhoidal veins after wounds operations or ulcerations in the rectum, or after dysentery, in abscesses in the spleen, in abscesses due to suppurating glands in the mesentery, or localized peritonitis around the hepatico-duodenal ligament. The liver, too, may be the starting-point, although it, as a rule, is attacked secondarily. The disease may then be due to suppuration dependent upon gall-stones or echinococcus, the liver branches and the trunk being primarily affected, while the radicles are normal.

The symptoms of pylethrombosis depend principally upon the occlusion of the portal vein, and consist in rapidly occurring ascites, swelling of the spleen, watery diarrhea mixed with blood, and dilatation of subcutaneous veins, the so-called "caput Medusa." The collateral circulation becomes established between the portal vein and the superior and inferior vena cava in a roundabout way. In the liver we find a direct communication between small branches of the portal and hepatic veins—*i.e.*, accessory portal veins. The superior gastric vein communicates with the inferior esophageal vein, and through that

with the intercostal vein and vena azygos, and with the superior and inferior diaphragmatic veins to the superior and inferior vena cava.

Another roundabout way is through the hemorrhoidal plexus. The superior hemorrhoidal vein empties its blood into the inferior mesenteric vein, which is a branch of the vena porta, but communicates through the hemorrhoidal plexus with the inferior hemorrhoidal vein, which is a branch of the internal pudendal and hypogastric veins and, through them, of the inferior vena cava.

The most important communication, however, takes place through the venæ parumbilicales, originating from the external iliac and epigastric veins in pairs, uniting near the umbilicus, and receiving branches from the gall-bladder; they ascend to the round ligament, receiving branches from the peritoneum and rectus muscles, and empty into the portal vein. The "Medusa head" may form, when the portal circulation in the liver is obstructed, but the trunk is permeable, and the blood from the portal vein passes then through the umbilicus into the veins of the anterior abdominal wall.

The symptoms of pylephlebitis depend less upon occlusion of the portal system than upon septic and thrombo-pyemic processes preceded by the symptoms of the original disease which caused the phlebitis.

Pain is always present, starting in the ileocecal region when appendicitis is the primary cause, or in the region of the spleen, epigastrium or hypochondrium when the primary cause is found there. The hepatic region is always painful. The pain is in the beginning probably due to inflammatory infiltration of the wall of the diseased vein, later to diffuse peritonitis. The liver is moderately enlarged, according to the size of the abscesses; when these are wanting, the liver may be normal in size. The spleen is enlarged by stasis from occlusion of the splenic vein, except in case of profuse hemorrhage from the stomach, when it may remain small.

Icterus is not a constant symptom. It may depend upon compression of the hepatic bile-ducts by the thickened branches of the portal vein.

Icterus is then imperfect, the urine containing bile-pigment, but the feces not being whitish. This is a true hepatogenic icterus. In other cases the icterus may be hematogenic, dependent upon extensive destruction of red blood-corpuscles and free biliary pigment in the blood, but the urine remains clear and the stools are not discolored.

Nausea and vomiting of a dark greenish material, accompanied with diarrhea mixed with blood, belong to the early symptoms. Profuse hemorrhage from stasis occurred in the writer's case, but is not mentioned as a frequent symptom.

Peritonitis develops gradually, although it at first is localized. The abdomen becomes distended, and respiration becomes costal; secretion of urine diminishes or ceases altogether.

The fever is of the usual septic type, with irregularly appearing chills, high temperature, profuse perspiration, and nocturnal exacerbations, and is accompanied with rapid emaciation. Delirium appears, and the patient dies in coma in a few days or after a more protracted illness of several weeks' duration, pyemic metastases in brain, lung, joints, etc., often preceding death.

The diagnosis depends upon the appearance of a number of symptoms in a distinct order, preceded by appendicitis, ulcer of the stomach, or any other of the etiological factors. These symptoms are, as mentioned, pain, violent chill, painful enlargement of the liver and spleen, icterus, bloody vomiting, and peritonitis. The more of these symptoms there are present, the more probable is the diagnosis.

The prognosis is absolutely fatal, and no treatment has been of any avail. The writer, however, suggests careful examination of the omentum in all cases of gangrenous appendicitis. If we find it agglutinated to the appendix or forming a limiting wall of an abscess, it would be in order to remove the omentum in sections, if we should find the veins stiff from phlebitis and thrombosis and the omentum infiltrated. We may, perhaps, thus be able to remove the infected veins before larger branches have become invaded.

SUCCESSFUL REMOVAL OF A PIECE OF WOOD IMBEDDED WITHIN THE BRAIN FOR THIRTY-TWO YEARS WITHOUT IMPAIRMENT OF THE CEREBRAL FUNCTIONS.

EVANS (*International Journal of Surgery*, April, 1896) reports a most interesting case with the above title.

The patient was a male, aged fifty-seven years. Served in the war of 1862 in the capacity of a gunner to one of the field pieces. The gun had been run up nearly to the top of a small hill upon which grew some scrubby

pines. The enemy let go a full charge of grape and canister while he was in this position, and he was struck, with what he and the surgeon at the time supposed to be a bullet, on the left side of the face, a little below and to the left of the left eye, making an ugly-looking wound. This was immediately closed by the field surgeon in charge, and the patient sent to the rear. No inconvenience was experienced from this wound aside from some slight soreness, and at the end of a week he was able to report for duty, and continued to serve until the expiration of his enlistment. On being discharged he took up farming, working hard for many years.

A year previous to consulting the writer, while stowing lumber in the hold of a barge, a plank slipped and fell endwise down the hatch, striking him on the face precisely over the region where he was formerly wounded. Slight pain and swelling followed, and in the course of two weeks there appeared an abscess, which was duly opened. After several weeks' treatment, and as the discharge of pus continued, he passed under the care of a surgeon who diagnosed cancer and treated with caustic paste.

Finally he came under the care of Dr. Z. H. Evans, when the error of diagnosis was at once recognized. A probe was introduced and soon came in direct contact with dead and detached bone. Now with the free use of cocaine Dr. Evans scraped away with a sharp spoon all of this material, exposing and opening up the posterior ethmoidal cells, as well as the floor of the skull. The dura was then exposed, and found much thickened. He now exerted some slight pressure with the tip of his finger on the presenting portion of the brain, which caused the discharge of a little bloody pus through a small cerebral opening. A small probe, passed into this opening some distance, came in contact with a hard substance. Thinking he had a bullet to deal with, he took a pair of Pean's forceps, passed them into this opening, and laid hold of this foreign body and drew it out. It proved to be a piece of pine wood measuring 1¼ inches long, one-third of an inch wide, and one-third of an inch in thickness. On removing this body the hemorrhage was profuse, and could only be controlled by packing the opening in the brain with gauze. This tampon was allowed to remain *in situ* for twenty-four hours, when it was removed and the parts washed out with plain clean water. A small piece of gauze was inserted into the wound for drainage. This method of treatment was carried on for several days, and finally the opening in the brain contracted and pus ceased to discharge. The soft parts were now brought together by means of adhesive plaster, and within ten days the external wound had closed.

Thirteen days after the removal of the wood the patient, while sitting in a chair, was seized with paralysis affecting the same side of the body from which it had been removed. The paralysis was not complete; he could walk by dragging his leg along, while his arm would swing by his side. His intellect was not disturbed; speech was somewhat thickened, and he found it a difficult matter to express himself.

He passed from observation shortly after, but Dr. Evans has heard that the patient has fully recovered the use of his limbs and is about to engage in his former work.

RADICAL CURE OF HERNIA.

BISHOP (*Medical Chronicle*, June, 1896) states that the incurability of hernia in adults by mechanical contrivances or trusses, however ingenious, makes one wonder that "radical cure by operation" is not more frequently resorted to. After a brief *résumé* of the progress that has been made in the technique of operations for the radical cure of hernia, and the results obtained, he says:

First, while return of the inguinal hernia is impossible, or nearly so, after Bassini's operation—since the inguinal canal as such has ceased to exist—there is no protection whatever against ventral hernia at the new point at which the cord makes its exit from the abdomen. Now, a relapse is a relapse, by whatever name the new hernia may be known. Second, there is a constant proportion between the size of the hernial opening to be occluded and the sac protruded through it, not only in its size but in its toughness and thickness. If, then, we only know how to utilize the sac, there is a means always ready and suitable to our hand. The question is, in what way can we proceed so as to obtain the utmost possible benefit to be derived from this structure?

What is it we wish to do? The central idea is to close the opening in the abdominal wall so far as to allow only the passage of the spermatic cord; not only the muscular wall, but more especially the aponeurotic and deep fibrous layers, which give the most efficient support to the abdominal contents.

This closure we wish to protect from forces acting from within—it is easy to protect it from forces acting from without—until it has become sufficiently firm. In the earliest stages of the uniting process the uniting medium is soft, plastic, and easily distensible. If it can be preserved from disturbance for six weeks it will have become tough and resistant, becoming more and more so as time elapses.

Moreover, even when the tissues have gained their utmost firmness, if a space is left for the passage of the cord the inner extremity of which is in a direct line with the outer, we are much in the condition that we were in before the hernia began. Can we, by any means, gain any further advantage, so as if possible to render the patient less liable to hernia than other men, now that we have the chance?

Macewen, after freeing the sac entirely up to the internal ring, doubles it upon itself in several folds, and, having made a gap for it between the parietal peritoneum and the transversalis muscle, places it there inside the muscular wall and over, but outside, the internal ring, so that not only is the wall thickened at this point, and the part which was the weakest is now rather the strongest, but the inner opening of the inguinal canal is bent at an angle, so that force from within no longer impinges upon it in a direct line with the space penetrating the abdominal wall, but in a direction more or less at a right-angle to this, and is thereby dissipated upon the rest of the muscular surroundings.

Of course, in his hands Macewen's method may be trusted to fulfill all these indications, but in the hands of those less practiced and skillful there is danger that the pad so formed may not lie immediately over the internal ring, and so a space be left on one side or the other, vitiating the whole proceeding and allowing of easy relapse.

To obviate this, the sac is freed, as Macewen frees it, up to the internal ring, and it has been found imperative that the outer wall of the canal be slit up, so that this ring may be well defined. The only case in which Bishop has known the sac to slough was one in which he had attempted to draw it upward through the undivided canal; it became bruised by its passage through the tough external ring. The sac is then inverted and drawn up by a bridle suture, so as to lie inside the peritoneal cavity and immediately over the ring like a convex boss on the inside. When this is done it is impossible that any portion of the ring shall be left unguarded.

Now, the muscular and aponeurotic layers are carefully united by interrupted silkworm-gut sutures, which are cut off short and buried. All loose tags or bruised and infiltrated connective tissue is cut away, leaving a perfectly clean wound, which is then accurately closed by horse-hair sutures.

But it is increasingly evident that success does not depend solely upon the operation chosen. In certain cases there is no sac to utilize, or the sac may be so injured during the earlier stages of the operation, especially in the process of freeing adherent omentum or gut, as to be useless; and then Ball's method, or even Barker's, may be necessary — there may be no alternative. Moreover, with all rationally devised and properly executed operations, successes have been obtained. Why is it, then, that so many relapses have also occurred, and do occur, so that, with many men, reference to "radical cure" only provokes a smile?

As long as any surgeon has his attention fixed on muscular exertion, strain, or accident, as the cause of hernia, he will be very apt to undervalue or miss altogether these other and more potent causes. The patient in bed is not being exposed to accident or muscular strain, and therefore need not fear these as causes of relapse until he goes about again. It is, therefore, only necessary to keep him in bed long enough, until the scar uniting his tissues is strong and firm enough, to ensure permanence to the surgeon's results; but should he suffer from chronic bronchitis, should he have a stricture, or well marked active piles, these will continue to act deleteriously, even directly after operation, or while he is convalescing, and when the lymph uniting the several surfaces is in its most plastic and yielding state. It may indeed be said that in ninety-nine out of a hundred cases where relapse takes place, the foundation of that relapse is laid in the first week after operation and by these causes.

It is, perhaps, hardly necessary to add that the occurrence of suppuration is fatal to success. In these aseptic days one almost takes primary union for granted, but the author has been unlucky enough to see suppuration in two of his cases, and in both there is a relapse at the point where pus was formed.

Bishop gives a list of forty-three patients operated upon. So far he has been fortunate enough to have had no death, nor does he think there should be any mortality in such cases. If a patient is suffering from any disease such as is likely to enhance the risk

materially, as, for example, diabetes, cardiac or renal trouble, a measure such as this would be out of court at once.

LAMINECTOMY FOR TUBERCULOUS DISEASE OF THE SPINE WITH PARALYSIS.

Mr. ANDERSON operated on a child, a fat, healthy-looking boy, aged nine, who had been suffering from tubercular disease of the spine for two years, with paraplegia of eighteen months. There was angular curvature in the upper dorsal region, the chief point of projection being at the third dorsal vertebra; the soft parts near the seat of disease were healthy. The paralysis affected the lower interossei, the abdominal muscles, and the lower extremities, leaving, however, control of the bladder and rectum; the breathing was almost entirely diaphragmatic; the sensation of the paralyzed parts was apparently unaffected, the boy's general health was good, and the functions other than those of locomotion were carried on normally. The patient had been under observation for nine months, and as no improvement in the paralytic symptoms had taken place during that time an operation was considered advisable. Mr. Anderson performed the operation in the usual manner, making a longitudinal mesial incision over the diseased vertebræ, peeling the muscular and other structures from the laminæ, and after full exposure these last were almost completely divided with a small saw close to the transverse processes on either side; the detachment was then completed with a bone forceps, and the detached laminæ were removed, exposing the membranes of the cord. The bleeding during the operation was very slight. The laminæ of the second, third, and fourth dorsal vertebræ were removed. Opposite the third dorsal a large quantity of purulent matter, partially solidified, was found overlying the dura mater, and a sinus was traced on the left side of the cord into the body of the vertebra. No sequestrum could be felt, but by means of a curette a quantity of pus, broken-down tuberculous matter and bone debris were removed. The sinus was then gently filled with iodoform, a drainage tube inserted down to the diseased body, the soft parts replaced, and the wound united with silkworm-gut sutures. Tho operation was well borne; the patient left the table in good condition. It was noticed after the removal of the laminæ that thoracic respiration, scarcely perceptible before the operation, was visibly increased.

Mr. Anderson remarked that the operation had been performed with varying success during the last few years for tuberculous caries with paralysis. It must be remembered, he said, that the operation is a severe one, and it should only be undertaken after long and patient watching, and in subjects whose general condition is fairly promising. In suitable cases he thought it hopeful, by relieving the cord from pressure of accumulated inflammatory products, and by allowing some treatment of the focus of disease at the time of operation and afterwards. The most difficult part of the operation is the detachment of the laminæ, since an injury to the dura mater, or even to the cord, may easily be inflicted, and the results may then be disastrous. The almost complete division of the laminæ by the saw renders the subsequent section by the bone forceps comparatively soft and easy, and the surgeon has only to take care in levering off the bone that no portion of the cut edge presses against the dura mater. In this, as in other cases, the spinal veins bled but little, and the very slight hemorrhage ceased spontaneously. It is, of course, undesirable to open the membranes.

A week after the operation the patient was in a good condition, with normal temperature and without any sign of spinal irritation; a slight spasmodic flexure of the right leg, noticed the day following the operation, subsided at the end of twenty-four hours. The respiration was still mainly abdominal. —*Medical Press and Circular*, June 10, 1896.

METHOD OF DISINFECTING THE BLOOD IN SERIOUS INFECTIOUS DISEASES.

The process to which Dr. HENRI BARRE has given the name "disintoxication of the blood" is derived from simultaneous employment of two therapeutic means already made use of in medicine: the one very ancient, bleeding; the other very modern, the intra-venous injection of artificial serum. The aim is to combat the phenomena of general intoxication; and purgatives, diuretics, stimulants, sedatives, etc., should first be given a fair trial—when these fail, "disintoxication" may be resorted to. The maladies most frequently calling for this measure are: uremia, eclampsia, diphtheria (when Roux's serum does not suffice), infectious pneumonia, capillary bron-

chitis, malignant icterus, general acute peritonitis, cerebro-spinal meningitis, typhoid fever, measles, smallpox, scarlet fever, puerperal fever, cerebral complications of rheumatism and gout, poisoning by alkaloids, extensive burns of the skin, etc.—in short, whenever the danger from general intoxication equals or surpasses that from actual lesions of the organs.

In all these diseases there is to be noted a considerable diminution, if not a complete cessation, of the urinary function, and the disintoxication of the blood has for its immediate purpose to eliminate artificially a certain quantity of toxins, and to help to achieve complete elimination by re-establishing the secretion of urine.

The necessary instruments consist essentially of two india-rubber tubes, terminating in needles of a diameter a little greater than that of a Pravaz syringe. The longer of these tubes (about 1½ meters) conducts into the veins of the arm the artificial serum, from a graduated vessel at a position more or less elevated in accordance with the degree of force required. The second tube (one meter long), of which the needle is inserted in a vein of the other arm, has its free end in a graduated vessel, and thus serves to extract blood.

The flow of the two liquids by this arrangement can be so regulated that no less serum flows in than blood flows out, and thus, the circulatory system being always equally full, arterial tension need not be diminished, as it is from ordinary bleeding.

The quantity of serum introduced and the quantity of diluted blood withdrawn may vary between 500 grammes and one liter for an adult, in accordance with the degree of intoxication.

As will be seen, this method differs materially from "washing the blood," which has been for some time applied by preference in cases of surgical infection. The difference consists mainly in the contemporaneity of the injection and the bleeding. This prevents any severe interference with the circulatory system, and allows, if death from intoxication seems imminent, the withdrawal of the greatest quantity of blood, and consequently disintoxication, with the least danger to the patient.

The exchange of liquids is made very quickly (in thirty to fifty minutes), so that no sharp reaction ensues; grave symptoms insensibly diminish, gradually disappear, and are followed soon by refreshing sleep. On waking, the patient desires to pass water. Sometimes sweating accompanies the re-establishment of urination, as in natural crises.

In the three cases (two of uremia, one of infectious pneumonia) in which Dr. Barre has applied his method — cases in which everything had proved useless and in which death appeared imminent—he obtained improvement as rapid as that just described. Not only did the most serious symptoms cease, but at the end of the urinary crisis they did not reappear, and the patient progressed steadily toward cure.

Dr. Barre expounds the following theory to explain the phenomena of the cure:

1. There is elimination of the excess of toxins, which constitute the immediate danger.

2. The effects continue because the bulk of blood is not diminished in volume in the system and does not need re-forming at the expense of the fluids of the economy, and, the arterial pressure not being diminished, no obstacle to diuresis is created.

3. Not only are toxins eliminated which appear to have an inhibitory action on the urinary action, but the toxins which remain become diluted and less powerful for evil.

4. As recent researches have proved, the alkaline salts have a favorable action on the bactericide powers of the blood, and the method thus provides the economy with a new means of fighting successfully against the microbes.

Dr. Barre believes the method will be found of enormous advantage in veterinary as well as human pathology.—*Medical Press and Circular*, June 10, 1896.

FRACTURE OF THE SKULL, WITH COMPLETE PARAPLEGIA.

LECLERE (*Deutsche Med. Woch.*, May 7, 1896) relates an interesting case of a man who sustained a compound depressed fracture of the skull by a body falling from a height vertically upon his head. He recovered consciousness within ten minutes of the injury. On admission, a wound was found over the skull, and a compound fracture with a triangular depression of bone. There was no injury to the vertebral column. There was a complete paraplegia, as well as a feeling of formication in the leg. Sensation was unimpaired. The knee-jerks were present. The arms and face were intact. As the patient's condition became worse, trephining

was performed four days later. The depression of bone was composed of three segments. The foremost fragment was removed, and a second one elevated, when an alarming hemorrhage occurred from the longitudinal sinus. Further operation was abandoned, and the wound was plugged. On the following day the third fragment was elevated. The surface of the brain looked edematous, and a considerable clot lay between the hemispheres. Power began to return in the legs almost at once after the second operation, and an hour later the patient could raise his legs from the bed, but the feet and toes remained paralyzed for a long time. In five weeks, attempts at standing and walking were made. Two months and a half after the accident the patient was able to walk to and from the hospital for electrical treatment. The gait still remained uncertain, but he was soon able to do some light work. The remarkable feature of the case was the complete paraplegia in the absence of any injury to the vertebral column. The motor centres for both legs were involved.—*British Medical Journal*, June 27, 1896.

CAUSATION AND TREATMENT OF MAMMARY ABSCESS.

The general practitioner is principally concerned with abscess of the breast as a very unwelcome accompaniment of the puerperal state. Since antiseptic midwifery has been taught and practiced, the belief is no longer entertained (except possibly by the remaining old fogies of the profession) that simple engorgement by milk is a sufficient cause of mammary abscess, and the well informed physician regards the occurrence of such abscess as a reflection on his skill and care as medical attendant—as, in fact, a complication often, if not always, to be avoided.

It is now known that abscess of the breast is the result of an infection, generally through a crack or abrasion of the nipple or areola. The most common agent is the staphylococcus, especially the *Staphylococcus aureus*. The vascularity of the breast during lactation, and the presence of an animal fluid (the milk), are favoring conditions, while any breach of surface about the nipple gives the microbe ready access; the infection is through the lymphatic channels. There is another possible source, alluded to by Dr. SHIELD in a late number of the *Lancet*—the entrance of organisms along the milk-ducts themselves. He refers to the fact now known among dermatologists, that organisms may enter the sebaceous glands of the skin and thus produce boils and pustules. Seeing that the breast is only a highly differentiated sebaceous gland, it would seem the same result might occur here—that is, that there might be infection of the breast through the nipple and milk-ducts. Chassaignac called the disease *canalicular intra-mammary abscess*. Boissard (quoted by Shield) speaks very positively of the invasion of the milk-ducts by streptococci and staphylococci, and terms the resulting suppurative inflammation *galactophoritis*. The branching nature of the abscesses along the milk-ducts seems especially to impress the writers upon galactophoritis. Shield thinks it always open to doubt in these cases that some breach of surface does not really exist, and although the experiments of Nocard who produced mammary abscesses by injecting tuberculous virus into the milk-ducts of a lactating goat place it beyond doubt that infection of the ducts is possible, this mode of infection certainly is not common. Shield affirms that for three years he has closely examined many cases of mammary inflammation and abscess without finding a single case where he could certainly attribute the abscess to infection through the milk-ducts themselves. The experiment has been tried of rubbing pus into the orifices of the milk-ducts of lactating animals, the breasts having previously been drained of milk; in none of the cases did any reaction or alteration occur.

With regard to the position and effects of purulent collections in the mammary gland, in some cases the suppuration is superficial—supra-mammary. Here the pus forms immediately beneath the skin of the areola. The majority of mammary abscesses are undoubtedly in the substance of the breast itself—intra-mammary. Great havoc is wrought by untreated suppuration of the breast. The abscess burrows irregularly so that numerous pockets and recesses are formed, and multiple "pointings" and sinuses ensue.

Statistics have been compiled showing the relative infrequency of acute mammary abscess at the present day in the great lying-in hospitals. Shield states that careful examination of the records of 2000 puerperal cases at the Queen Charlotte Lying-in Hospital has failed to disclose a single case of mammary abscess. Most of the patients were primiparæ, in whom the nipples are often badly developed, badly cared for, and frequently sore. The cause, he says, is not far to seek

in the precautions taken by the physicians to ensure the cleanliness of the nipples and of the infant's mouth. Acute mammary abscess is generally preventable by such simple precautions. Many cases are due to faulty development of the nipple; here much can be done in the way of prevention by the judicious use of the breast-pump, and by hardening, astringent lotions before parturition. The prevention of mammary abscess when threatened, by expression of milk and the use of an exhausting bottle, is favorably spoken of by Spencer and Beale, who also advocate the treatment of mammary abscess by opening with a trocar and cannula and applying the exhausting bottle to the aperture. Shield would hesitate to apply this method to deep-seated collections of pus with loculi in the substance of the gland. He also feels sure that the treatment of acute mammary abscess by the method of establishing a free opening anteriorly radiating from the nipple is essentially wrong. It leaves a scar in front of the breast and opens the purulent collection in a position the least suitable for drainage. As a consequence, many of these cases need several operations, until drainage-tubes are seen projecting through various openings and very unsightly scarring and deformity results, and the breast is afterwards functionally almost useless. His method is as follows: As soon as elasticity and deep fluctuation are evident, an incision is made radiating from the nipple just large enough to admit the index finger of the operator, and this is deepened until pus flows. The finger is now passed into the cavity and it will be brought fairly near the surface in a dependent position, and this is generally at the thoracic mammary junction. Sometimes the finger passes toward the axillary margin, and occasionally the cavity is so large that a stout bent probe must be used to indicate the deepest part of the abscess. In this situation, the gland being well raised by an assistant, a free opening is to be made, large enough to well evacuate the pus, and, the finger being now introduced through this, the inferior opening, the operator will be surprised to find that the pus has burrowed about, and is contained in loculi bounded by fibrous septa. It is especially noteworthy that in many cases quite a narrow channel towards the nipple connects the deep abscess with the more superficial collection of pus opened anteriorly, and it will then be clearly understood how inefficient is drainage in the practice of those who are content with a small incision anteriorly in these cases.

The remainder of the treatment is obvious: the cavity is well flushed out with an antiseptic solution, and a full-sized tube is introduced from below (this must be confined by a silk thread). The opening made near the nipple is closed with fine horse-hair and painted with collodion. It readily unites, with only a faint scar, and the free drainage prevents the possibility of the re-collection of pus and a necessity for further operation. The tube, a large one, can be left in the cavity as long as is needful, and is slowly shortened and withdrawn. The wound heals with a larger scar, but this is completely hidden by the position and volume of the gland above.—*Boston Medical and Surgical Journal*, June 11, 1896.

LAPAROTOMY IN THE TREATMENT OF AFFECTIONS OF THE GALL-BLADDER.

KEHR reports 206 laparotomies practiced for the treatment of affections of the gall-bladder (*La Médecine Moderne*, No. 49, 1896).

In his first group of cases the calculi were found in the gall-bladder or the cystic duct. There was no reason to remove the gall-bladder. In 127 cases there was one death, three days after operation, from cardiac palsy. Fistula closed in all cases.

In the second group the gall-bladder had to be removed on account of suppuration. One patient died out of twenty-one.

The third group comprised the cases in which the calculus encysted in the ductus communis was too voluminous to be removed. Thirty calculi were taken out by choledocotomy, one by cholelithotripsy. There were two deaths—one incident to dilatation of the stomach, the other from perforative peritonitis.

In the fourth group, in 117 cases there were affections other than calculous tumors; for instance, vesical adhesions, etc. Exploratory puncture was necessary to make a diagnosis. Two patients died.

In the fifth group, cancer of the liver or other serious maladies complicated biliary lithiasis. Ten died, out of nineteen.

The operation lasted from two to four hours in fourteen of the cases; five times gastro-enterostomy had to be performed at the same time.

The danger of recurrence of calculus is slight. In one case this was due to retention of a silk suture; hence Kehr employed only catgut for a time, but since one suture loos-

ened he has returned to long threads of silk which can be removed.

As to the operative indications: All these patients had been subjected for a long time and without success to medical treatment and suffered from violent pains. Usually the calculi were very large. It is important to practice surgical intervention before diffuse and suppurative inflammation of the gall-bladder and biliary canal seriously affect prognosis.

NEW REMEDIES IN GYNECOLOGY.

La Médecine Moderne calls attention to two new remedies, irol and formol. Irol contains 45 per cent. of oxalate of bismuth and 24.8 per cent. of iodine. It is a fine greenish powder without taste or odor, insoluble, becoming red and setting free iodine on contact with moist air or warm water. It is not toxic, and does not irritate the skin. It has been employed by Högler in more than two thousand cases in the form of powder, gauze, vaselin, collodion, and emulsion. It has been found especially efficacious in the treatment of ulcers and boils.

Formol, a colorless gas, is very soluble in water and alcohol. It is powerfully antiseptic and non-toxic, and has been used for the preservation of foods by means of a specially constructed alcohol-vapor lamp. It is possible to absolutely sterilize large rooms, the vapor given off being formaldehyde, which, though irritating to the mucous membrane, is not poisonous.

Legen and Levy state that they have obtained excellent results from these medicaments in the treatment of blennorrhagia. Irol is used in emulsion in glycerin and water. This drug prepared with solidified glycerin is also often extremely valuable in the topical treatment of uterine and other gynecological affections. The usefulness of solid glycerin ovules of irol, formol, dermol, aristol, iodol, di-iodoform, ichthyol, microscidine and thiol commends itself at once to all those whose line of work brings to them many cases of infection of the genital tract.

BRAIN COMPLICATIONS OF EAR DISEASE.

SWASEY (*Boston Medical and Surgical Journal*, April 9, 1896), in a careful *résumé* of this subject, says:

Without surgery these cases are doomed. The tendency in the past few years is to operate earlier and more radically than was the case a few years ago.

One of the latest authorities, Thomas Barr, of Glasgow, in an article read before the International Otological Congress in 1895, lays down this as a rule to follow in these cases: "I would therefore say that the present trend of surgical opinion is that we shall rarely go wrong if, in the presence of grave intracranial symptoms due to a chronic septic process in the middle ear, we explore the various pathways by which the disease invades the interior of the skull, and, if no extra-dural collection be found, or when found if its removal be not followed by marked improvement, we open the dura mater and examine the subdural space; and even then, if the results be negative, we need not hesitate to explore the temporo-sphenoidal lobe or the cerebellum, or both."

Starr, of New York, as recently as 1893, in his work on Brain Surgery, says: "As a rule, abscesses lie very deep within the white matter of the brain, and to be reached and emptied the brain must be incised."

Hence it has been the practice, until very recently at least, to open the skull by the trephine at a point or at points distant from the fountain source of the trouble; and to mark these localities, measurements were taken. What is known as Reid's base line is drawn backwards from the under margin of the orbit, through the centre of the external auditory canal to the occiput. Along this line measurements are taken from the centre of the external auditory canal.

As Barker stated that nine-tenths of all the abscesses of the temporo-sphenoidal lobe could be opened at one certain point, this he located by measuring backwards from the bony meatus on Reid's line 1¼ inches, and then directly upwards 1¼ inches. Here it is that the trephine should be placed, if we wish to explore this particular lobe. To go directly into the lateral lobe of the cerebellum, we measure backward on Reid's line 1½ inches and then directly downward one-fourth of an inch. If we measure backward one inch and then upward one-fourth of an inch, we come directly down upon the lateral sinus. To open the mastoid antrum, measure backward one-half an inch and upward one-fourth of an inch. To explore the anterior surface of the petrous bone and part of the temporal lobe, we measure directly upwards from the centre of the meatus one inch. Van Bergman makes this his point of entrance, and from here he would, if necessary, expose the lateral sinus and open the antrum. It is seen that the trephine is very seldom

used in front of the meatus, and only once below Reid's line.

The surgeons at the present day seem to be less inclined to make these distant openings at first; they attack the fountain source of the infection by going through and clearing out the antrum, searching for a carious opening inwards, and following it up if one be found. To expose and examine the mastoid emissary vein at this time may give much important information. If found thrombosed, it will indicate the same condition in the sinus. If the sinus is filled with a thrombus, or more especially if it contains pus, it will need to be shut off from the lungs by a ligature around the internal jugular vein in the neck. If the symptoms indicate more serious trouble than would probably come from simple antrum or attic involvement, and the sinus be free from clots, then more and deeper explorations will be justifiable, for the desperate condition of our patient will necessitate it.

Cerebral abscess, when in the stage of development, is small and superficial, and is on the surface of the brain. When it is larger and of longer duration it sinks into the substance of the brain. And still more frequently is there a subdural abscess just adjacent to the tympanic roof or the wall of the antrum. This is shown by some recent statistics of Jansen, of Berlin, who found in 184 cases of intra-cranial suppuration no less than 144 cases of extra-dural abscess; only thirty-five were sinus thromboses, and but five were cerebral abscesses. This contradicts the statement of Starr already referred to, who also states in another place that cerebral abscess, lepto-meningitis and sinus thrombosis occur with about equal frequency. Jansen's cases show, also, that extra-dural abscess was five times more common in the posterior fossa than in the middle.

These figures seem to show that we should operate earlier, and go into the cranium more frequently; we should be content to explore at first near the roof of the tympanum and mastoid, rather than go to some distant point at once and so leave a large area untouched.

In closing, the author again quotes Thomas Barr, to indicate what has been done in this line in the past few years, and in a way to prophesy of what we may expect in the future. He says: "In the various medical journals I have found in these seven years records of 158 cases in which operations followed by complete recovery have been performed for relief of the intra-cranial complications of purulent ear disease. . . . The record of work during the past seven years in operations for cerebral and cerebellar abscess has been remarkable. At least fifty-nine cases of cerebral and seven cases of cerebellar abscess have been thus successfully treated. Many of these were associated with septic thrombosis of the sigmoid sinus, some with meningitis."

SUCCESSFUL SUTURE OF PERFORATING TYPHOID ULCER.

Dr. F. S. Watson (*Boston Medical and Surgical Journal*) reports the case of a man, twenty-eight years of age, who in the seventh week of typhoid fever was suddenly seized with severe pain and great tenderness of the abdomen, accompanied with a sharp rise of temperature. When seen by the author twelve hours later, there were present signs of beginning collapse. The abdomen was opened by a small incision; the peritoneum found to be thickened, and a loop of the small intestine was attached to the abdominal wall by recent and delicate adhesions; in the centre of the adherent area there was a perforation of the intestine with a ragged border, and of the size of the end of the thumb; from this, feces were oozing. There was a localized, but no general, peritonitis. The perforated knuckle of the bowel was drawn out of the wound; the edges of the intestinal ulcer were excised until sound tissue was gained, and then sutured together with a continuous Cushing suture of fine silk. No other ulcers were found, and the bowel was returned and the abdominal wound closed. There was a good deal of shock, but the patient rallied soon, and convalescence was uninterrupted. This the author believes to be the sixth successful case of laparotomy for perforating typhoid ulcer.—*International Journal of Surgery*, July, 1896.

SUTURE OF A DUODENAL ULCER.

At a meeting of the Clinical Society of London, May 27, 1896, Dr. L. A. Dunn reported the case of a man who, while at work, felt a sudden pain in the epigastrium, attended by nausea and faintness. The abdomen was distended and markedly tympanitic, and the normal hepatic dullness was absent. The abdomen was opened by a median incision above the umbilicus, which allowed of the escape of a quantity of gas and yellowish fluid. A small perforation was found in the anterior wall of the first part of the duode-

num. This was closed with fine silk Lembert sutures, and the abdominal cavity was flushed out with boiled water at a temperature of 100° F.

The patient did well for ten days, when the pain returned and his temperature went up. He became worse, and the abdomen was reopened—on this occasion along the right costal margin, as it was thought that a collection of pus had formed between the liver and the diaphragm. Nothing, however, was discovered, except a few adhesions in this region, chiefly beyond the reach of the finger. An exploring needle, passed through the eighth intercostal space, was felt to traverse the abdomen and perforate these adhesions, and a drop of pus was evacuated by this method. The wound was closed. The temperature fell immediately after the operation, and remained low till the sixth day, when the wound was found to be distended with pus. The removal of two sutures sufficed to evacuate this, after which recovery was rapid and complete.—*International Journal of Surgery*, July, 1896.

INTUBATION.

TRUMPP (*Munch. Med. Woch.*, April 28, 1896) mentions that there is still some doubt as to the method of taking out the tube after intubation, whether by means of a piece of attached thread or by the extractor. There are disadvantages attending the thread method, and especially because the fixing of the tube thus produced does not allow of its free play, and hence causes a liability to erosion of the parts. The use of the extractor, on the other hand, is hardly possible in private practice, as a sudden stoppage of the tube by membrane might cause suffocation unless the tube could be withdrawn without delay. The use of the extractor may also require considerable skill, especially where a small tube sinks deeply into the larynx. In a case where attempts at extraction caused a small tube thus to sink further down, the author adopted the following device: Pressure with the thumb was made on the trachea, just below the cricoid cartilage, where the end of the tube could be felt; the cough thus produced forced the tube out. The author has found that this method of expression never failed in the cases in which he subsequently tried it. The pressure may be made with both thumbs, the fingers finding support on the neck; it should be directed inwards and directly upwards. If a more powerful pressure is exerted the tube may be forced not only into the mouth but even completely out of it. The author has never seen any disadvantages attending this method. Of course the pressure should be made intelligently and not in too forcible a manner.—*British Medical Journal*, May 30, 1896.

ACHILLODYNIA.

ROMME (*La Tribune Médicale*, No. 14, 1896) quotes Albert to the effect that achillodynia is essentially characterized by the circumstance that standing and walking become impossible because of the severe pain they cause. This pain disappears entirely when the foot is elevated and at rest. It is located exactly at the insertion of the tendo Achillis. On examination there is here found a slight swelling suggesting a thickening of the tendon at its point of insertion. There is very little tenderness on pressure. At times it seems as if the posterior surface of the calcaneum was slightly enlarged on each side of the insertion of the tendon.

Schüller held that the symptoms were caused by inflammation of the bursa lying between the calcaneum and the tendon.

Clinical observation of this affection shows that usually in healthy people, as the effect of trauma—for instance, an ill-fitting shoe or a long walk—often without any appreciable cause, pain develops under the insertion of the tendo Achillis; sometimes it attacks both feet. It comes on gradually—at first a dull aching, later almost invariable pain on standing or walking. Under simple treatment, pain disappears, but is liable to recur. It is not liable to be confounded with peri-tendinous cellulitis or with telalgia.

Roessler saw nine cases of achillodynia, but as they got well without operation he had no opportunity for making pathological studies. With the idea that the affection was due to an inflammation of the retro-calcaneal bursa, he made a careful post-mortem examination of a large number of cadavers. He found that the retro-calcaneal bursa was placed between the anterior surface of the tendo Achillis and the posterior calcaneal surface, in the angle formed by these two structures, near the insertion and a little below the upper border of the greater tuberosity of the calcaneum. It is about the size of a fifty-cent piece, and is almost completely covered by a tendon. Above and laterally it is covered by the fibrous tissue which, running from the borders of the tendon, passes

toward the bone, forming a thin investment. Anteriorly and posteriorly this membrane blends with the periosteum and the tendinous sheath. In the interior of the cavity are almost constantly found fatty fringes coming from the adipose peri-articular tissue. Of 225 specimens studied, normal conformation was found in very few. Usually the walls of the bursa were much thickened. Often there was a hypertrophic periostitis with fatty degeneration of the hypertrophied layers. Endothelium was often desquamating or proliferating, forming several layers. In some cases the periosteum corresponding to the anterior wall of the bursa was partly atrophied, with subjacent atrophic osteitis and the formation of exostoses. Sometimes the walls of the bursa were almost cartilaginous. Sometimes the fatty fringes formed veritable foreign bodies, almost completely filling the cavity of the bursa. Very frequently the cavity was filled with a viscid liquid.

Patients are very often sufferers from gonorrhea. The frequency of this disease, however, suggests that this may be a simple coincidence.

Treatment is very simple in acute cases: rest, pressure and evaporating lotions are sufficient to relieve. In chronic cases, massage and pressure by means of a moist sponge held in place by wet bandages usually suffice to bring about a cure. If symptoms persist, incision with drainage or extirpation of the bursa is advisable.

PUNCTURE OF THE LATERAL VENTRICLE.

Von Beck (*La Tribune Médicale*, No. 13, 1896) reports three cases of puncture of the lateral ventricle.

The first case was a boy fourteen years old, who, following diphtheria contracted at the age of seven, suffered from middle-ear disease. This lasted for three years, and remained cured for four. The boy was suddenly attacked with pains in the ear, radiating over the right side of the head, vomiting, coma, but no fever. His neck became stiff, general hyperesthesia developed, and the ophthalmoscope demonstrated a neuro-retinitis. The pulse dropped to 54. The right ear-drum was thickened, discolored, but not painful. The mastoid was trephined and found to be markedly sclerosed. The cells were filled with a turbid serum. The transverse sinus and the temporal lobes were exposed; the sinus was intact. There was no pulsation of the brain. Puncture of the temporal lobe gave negative results. The lateral ventricle was then punctured and seven drachms of cerebro-spinal fluid withdrawn. The comatose state disappeared, pulse rose to 80, neuro-retinitis diminished, and the patient felt very well. The tenth day after intervention, cephalalgia reappeared, with pains in the teeth. A few days later there was vomiting and coma, and the pulse dropped to 54. The trephine opening was then enlarged, and with an aspirating needle the occipital and frontal lobes were explored, with negative results. A new puncture of the lateral ventricle was then practiced, and 2½ ounces of clear cerebro-spinal fluid withdrawn. The symptoms promptly disappeared, but in ten days again developed and were accompanied by facial paresis and palpebral ecchymoses. The lateral sinus was again punctured, and 2½ ounces of clear cerebro-spinal fluid aspirated. The patient had no further relapses; he left the hospital two months later comparatively well, and has remained so since (two years).

The second case was a boy four years old, who, as a result of a fall, suffered fracture of the frontal bone without paralysis. Three weeks after this accident the child was brought to the hospital with the phenomena of meningitis. There was coma, the pulse was running 120, the neck was stiff; general hyperesthesia, exophthalmos, double retinitis and high temperature prevailed. Examination showed a comminuted fracture of the right frontal bone, with suppuration extending over the temporal region. The region of fracture was exposed, the dura mater was found torn, and beneath it there was a cortical abscess the size of a pigeon's egg. This was evacuated and drained. All the symptoms were ameliorated, but eight days later symptoms recurred and there was a hernia of the brain. On the eleventh day convulsions developed; on the fifteenth these were renewed and there was loss of consciousness, with left hemiplegia. The lateral ventricle was then punctured and 2½ ounces of turbid cerebro-spinal fluid evacuated. The symptoms promptly lessened in severity and finally disappeared. The patient recovered completely.

The third case was a girl thirteen years old who, in May, 1893, suddenly lost consciousness. Insensibility lasted but a short time, but was followed by severe cephalalgia. Three weeks later there was a second attack.

From this time these recurred daily, accompanied by vomiting, vertigo, and cephalalgia. This condition remained stationary until September, 1895, when the acuity of vision of the left eye was diminished. Two months later there was blindness of the right eye. Examination showed nystagmus and double neural retinitis, more marked in the left eye. Tumor of the brain was diagnosed. Iodide of potassium given internally produced no beneficial effect. Osteoplastic resection was made over the left occipital region. As intra-cerebral pressure seemed specially well marked, the lateral ventricles were punctured. After evacuation of 2½ ounces of cerebro-spinal fluid the cerebellum was explored, but no tumor was found. All the symptoms became better. Twenty days after intervention there was a relapse, followed six days later, in consequence of excitement, by a loss of sight, high temperature, comatose condition, and an attack of convulsions. The ventricle was again punctured and over seven ounces of cerebro-spinal fluid aspirated. The symptoms again disappeared, and for four weeks the patient remained well. There was then recurrence, which was relieved for the third time by puncture and evacuation of four ounces of liquid. This patient is still under observation.

CASE OF GANGRENOUS CYSTITIS WITH EXFOLIATION OF THE BLADDER-WALLS.

COLLINS WARREN (*Boston Medical and Surgical Journal*, June 25, 1896) reports the case of Mrs. X., aged thirty-eight—not only on account of the great rarity of the affection, but as an illustration of the reparative power of the bladder and the bearing of the same upon surgical operations contemplating removal of a large portion of the bladder, or even the entire organ. Dilatation of the vagina was performed in January, 1893, for the relief of vaginismus. A month later, symptoms of cystitis, which had been present before the operation, became pronounced, and the patient soon complained of obstruction to the flow of urine; on examination a slough was found about the size of two joints of the little finger, protruding from the meatus. Under ether this slough was drawn out by means of dressing forceps until a roll of membrane the size of a pocket-handkerchief had been extracted in one continuous mass. A large quantity of pus escaped as the last corner of the slough was drawn from the urethra. Complete incontinence of urine was the immediate result; but gradual recovery of control finally enabled the patient to attend to her ordinary pursuits and to discard the portable urinal. The urine ultimately became entirely normal.

The exfoliated membrane was crusted with triple phosphates on one side; ragged and infiltrated with opaque, greenish pus on the other. It was made up largely of fibroid tissue, traversed here and there by the remains of blood-vessels. There was no trace of an epithelial surface to be found, nor were there any muscular fibres.

Exfoliation of the mucous membrane of the bladder may be complete or partial; it may include the submucosa and the muscular tissue, or it may only involve the epithelial layers. It is a rare event, and, including the case under discussion, has been reported but fifty-six times in all literature.

The exfoliated membrane may be only a small portion of the mucous membrane alone, or the slough may consist of the entire lining of the bladder *en masse*, with or without the muscular coats. In the case reported by Morez the slough included a portion of all the coats, even the peritoneum; recovery followed.

The cause of the process may be: (1) severe septic involvement of the submucosa, from cystitis or extension; (2) trauma causing extravasation of blood into the submucosa; (3) obstruction of the arterial supply to the mucous membrane by retention of urine, pressure of intra-pelvic tumors, pressure of a child's head or instruments during delivery, or pressure of a gravid retroflexed uterus.

The lesion is by far more common in women. Stein found but five cases out of fifty in males. The forty-five cases in women were due either to pressure during delivery or to the pressure of an incarcerated retroflexed uterus. In men the causes are retention of urine, stricture of the urethra, stone in the bladder, acute or chronic cystitis.

In females, though most of the previously reported cases have been due to pressure and ischemic necrosis, still intense bacterial infection of the submucosa is an effective cause, as in the case of Orlowski in which the bacterial infection of the coats of the bladder took place by extension in a case of dysentery in a girl three years old; necrosis and gangrene, with elimination of the gangrenous portion through the urethra, followed. In the case reported by Lockhart, a young married woman suffering from moderate cystitis, necrosis and exfoliation of the mucous mem-

brane of the bladder followed a few days after an attempted perineorrhaphy; the membranes included portions of the mucous, fibrous, and muscular coats; recovery followed without complications. This case corresponds as closely with the writer's as any of the other reported cases.

Stein reports a case in a man, associated with pyelitis and stone in the bladder. Microscopic examination of the exfoliated masses showed necrosis of the mucosa and submucosa.

The prognosis in men is grave, in women favorable. Of the eight reported cases of this disease in males, two died (Seutham's and Clarke's), six recovered. In Cabot's and Marchand's the exfoliated membrane was only epithelial. Of the forty-six cases occurring in women, including the present one, only nine died. In women, expulsion of the necrotic mass is much more easy than in men.

Gottschalk refers to three fatal cases caused by pressure of a retroflexed gravid uterus.

Fenwick showed a specimen of entire exfoliation of the mucous membrane from the bladder of a man, removed through perineal section done for relief of long-standing purulent cystitis.

Haultain (cited by Fenwick) collected fifty-three cases of this disease, thirty-three of which were associated with pregnancy, and twenty due to septic infection, etc.

One of the immediate results of the process of necrosis and elimination may be spontaneous rupture of the bladder-wall. A second result is the deformities caused by the cicatricial tissue in the process of repair. Any suppurative cystitis involving the submucosa cannot be cured without some contraction of the bladder.

Restoration of the sloughing structures, and complete return of the normal bladder functions, have been noted in many of these cases. The capacity of the urinary bladder for repair, even under the most unfavorable circumstances, is illustrated by many of these cases, notably those of Morez, Fenwick, and Lockhart.

This capacity of the bladder for repair has also been demonstrated in cases of resection of a large portion for any cause.

One of the most remarkable cases illustrating the possibility of the restoration of the bladder is that of Loumeau, of Bordeaux. The case was that of a woman thirty-five years of age. During an operation for the removal of adherent and suppurating uterine appendages, all of the bladder except the portion lying upon the vagina and containing the orifices of the ureters was accidentally cut away. A new bladder was formed by suturing the peritoneum to the portions still left. This vesico-cutaneous sac was treated just as in supra-pubic cystotomy. Recovery resulted, and nine months after the operation the bladder held 360 grammes of urine.

Watson refers to four cases of extirpation of the bladder, with three recoveries.

Large portions of the bladder have been successfully removed in cases of vesical cancer.

FREQUENT URINATION CURED BY THE BICYCLE.

According to the *Centralblatt für die Krankheiten der Harn und Sexual Organe*, 1896, the pollakiuria of young people is seldom associated with disease of the urinary system, the brain, or the spinal cord. Much more frequently it is simply a stigma of neurasthenia. Often all therapeutics are unavailing. It was observed that during bicycle rides the desire to urinate was either entirely wanting or was much less frequent and urgent, and therefore two obstinate cases were ordered to take, twice daily, long bicycle rides; cure resulted in both cases.

DISINFECTION OF THE URETHRA BY THE INTERNAL ADMINISTRATION OF ENTEROL.

FASS (*Centralbl. für die Krankh. der Harn und Sexual Organe*, 1896) states that enterol is a watery, colorless, sometimes slightly brown liquid, with a specific gravity of 1.036, and with the taste and smell of kresol. It is slightly soluble in 100 parts of water, and has about six times the antiseptic strength of carbolic acid. Properly diluted—that is, one part of enterol to 500 of water—it can be given in the dose of from half a drachm to a drachm daily for months at a time without producing any untoward symptoms. It is given in pill, capsule, and mixture with equal parts of olive oil.

Thirty capsules can be taken at once without harm. After entering the stomach, about eighty per cent. remains in the alimentary canal, and twenty per cent. is excreted by means of the urine. If employed in weak dilution and with abundance of liquid, the probability is that much more is absorbed. In the treatment of bacterial inflammations

of the genito-urinary tract, the patient is gently purged, the lower gut washed out with clysters of water or neutral oil, and a milk or liquid diet given, enterol being administered with each repast. After large doses and prolonged use of enterol, the urine sometimes turns green. The author states, however, that he has given the drug in doses of one-half to one drachm daily for weeks, the urine exhibiting the characteristic gray-green color, without producing any systemic complications. Indeed, the drug does not produce the slightest irritation in the kidneys or genito-urinary tract, and even in chronic nephritis the albumin contained in the urine is not increased. Nevertheless, we are cautioned against the use of the drug in cases of acute nephritis, congestion of the kidney, or feebleness of the heart. The drug possesses the merit of being safer and more efficient than any of the non-internal antiseptics. Nervous women, after taking the capsules, complain of an unpleasant taste in the mouth and burning in the stomach. When there is marked inflammation of the stomach, the drug should be greatly diluted. In the case of gastric ulcer the drug should not be exhibited. The indications for the use of the drug are for the cure of cystitis, pyelitis, and before and after operative interference with the urinary passages in cases of acute gonorrhea. In the latter affection the enterol is particularly efficacious, eight capsules being given each day.

DIABETIC GANGRENE.

KÖRNIG (*Berliner Klin. Woch.*, No. 25, 1896) has shown that sloughing inflammations are often the first signs of diabetes in apparently perfectly sound, strong men, and that whenever in this class of patients such forms of inflammation as (for instance) carbuncles develop, the urine should be examined. It must, however, be remembered that in the acme of many inflammatory processes sugar is occasionally found in the urine, but rarely in large quantities, and customarily vanishes when the inflammation has passed its acme. The local treatment of inflammations in diabetics must always be associated with most rigorous constitutional treatment. It is a matter of prime importance to promptly limit the extension of the gangrenous process. When this process is not associated with active inflammatory symptoms, every effort should be made to keep it dry, blisters from necrotic pieces of skin should be cut away, and every wet dressing avoided, even though containing disinfectants; the parts should be dressed with dry iodoform cotton, and so arranged that the air may reach them. When the inflammation is pronounced, long incisions may be made and the necrotic parts removed. When the limb is affected with gangrene, it is well if possible to wait until by anti-diabetic treatment and dry dressing the process has ceased to extend. This, however, is often impossible. Gangrene is prone to steadily spread, and the sugar not diminish; the patient becomes feverish, comatose, and perishes. Under these circumstances the only treatment to be considered is removal of the gangrenous limb. Radical operation, then, is indicated when inflammation is extending in spite of energetic antiseptic treatment, when fever is increasing and sugar not diminishing, and when coma is threatening. The surgeon who amputates must, however, be absolutely sure of his asepsis.

A NEW METHOD OF OPERATING FOR HYDROCELE.

Surgeon-Lieutenant-Colonel E. LAWRIE, of Hyderabad (*The Lancet*, June 13, 1896), presents the following technique in the operation for the radical cure of hydrocele: The sac is punctured in the usual way, and when about a third or one-half of the fluid has been withdrawn two drachms of a saturated solution of bichloride of mercury in glycerin are injected and mixed with what remains, and allowed to rest in the sac for from half a minute to a minute. The whole of the fluid is then drawn off, to the last drop. Very little pain is experienced, and unless the patient is nervous and takes chloroform he is able to move about immediately after the operation. For the next few days he must, as a rule, lie about, but need not in any case be confined to bed, and in a week or less he is quite well. Provided the surgeon is careful that his hands and instruments and injections are clean and free from micrococci when the puncture and injection are made, these produce a uniform result—*i. e.*, sufficient aseptic inflammation to obliterate the sac and nothing more.

PROPHYLAXIS AND TREATMENT OF PUERPERAL MANIA.

SAVAGE (*Gaz. Hebdom. de Méd. et de Chir.; Centralbl. für Gynäk.*, No. 25, 1896) thus classifies puerperal mania:

1. Psychical, during pregnancy: (*a*) in the

first months, and coincidently with pregnancy; (*b*) in the last months.

2. During childbirth: (*a*) hysterical and transitory; (*b*) chronic.

3. In the course of mastitis, lasting sometimes but a single day. This form may also become acute.

4. In the second week following delivery.

5. From the second to the sixth week after delivery.

6. Following weaning.

Heredity plays a major rôle in the development of the puerperal psychoses. The question may well be raised as to whether a hysterical woman is justified in marrying. When the first pregnancy occurs after the thirtieth year, complications of this nature are peculiarly liable to develop. Mania may be the first symptom of pregnancy; if it develops during the first months it is as a rule light and transitory; if during the last months, it is much more liable to persist, hence little is to be hoped for from premature delivery. During parturition, hysterical outbreaks may occur with every pain; they usually disappear after delivery, but occasionally persist. When symptoms of disturbed intellect develop during the first fourteen days following delivery, they are usually maniacal in character; when they come later, they are usually more in the nature of a melancholia. There is often sleeplessness, absolute loss of appetite, and loathing of surroundings. Recovery may take place in a few weeks or some months. It is often necessary to change the residence of the patient. It is important to avoid further pregnancies in the next few years. Eight per cent. of the author's cases of puerperal mania died; twenty per cent. did not recover fully. General paralysis sometimes develops as a complication. The psychical disturbances following weaning are often associated with bodily weakness, are melancholic in type, and are often completely curable. The first symptom of mania is sleeplessness, and the outbreak may sometimes be avoided by the early use of chloral and bromide.

TREATMENT OF URTICARIA BY CALCIUM CHLORIDE.

WRIGHT NETLEY (*British Journal of Dermatology*, January, 1896) reports the case of a patient eighty-four years of age, who, after six weeks' suffering from a very severe and obstinate urticaria, was greatly weakened from loss of sleep. In the beginning of the attack there was much dyspnea and marked irregularity of the heart. The itching was intense, so that the patient was kept scratching day and night. With the idea that the disease might be due to a change in the coagulability of the blood, chloride of calcium was given in thirty-grain doses night and morning. All other drugs excepting sulphonal were discontinued. There was immediate improvement, the patient passing a good night. The dose was increased to forty-five grains. The pulse became more regular, the eruption on the arms disappeared almost completely, and the itching was less intense. After two weeks the patient was comparatively comfortable.

The second case received some antitoxin injections because of diphtheria. Following this there was a violent outbreak of urticaria. Sixty grains of calcium chloride were given in two doses. The patient rapidly recovered.

Reviews.

THE USE OF SYMPTOMS IN THE DIAGNOSIS OF DISEASE. By Hobart Amory Hare, M.D., B.Sc. Illustrated with engravings and colored plates.
Philadelphia and New York: Lea Brothers & Co., 1896.

The preface of this book so well describes its object that we print it herewith:

"The object of this volume is to place before the physician and student the subject of medical diagnosis as it is met at the bedside. To accomplish this, the symptoms used in diagnosis are discussed first, and their application to determine the character of the disease follows. Thus, instead of describing locomotor ataxia or myelitis, there will be found in the chapter on the Feet and Legs a discussion of the various forms and causes of paraplegia, so that a physician who is consulted by a paraplegic patient can in a few moments find the various causes of this condition and the differential diagnosis between them. So, in the chapter on the Tongue, its appearance in disease, both local and remote, is discussed. In other words, this book is written upon a plan quite the reverse of that commonly followed, for in the ordinary treatises on diagnosis the physician is forced to make a supposititious diagnosis, and, having done this, turn to his reference book and read the article dealing with the disease supposed to be present, when if the description fails to coincide with the symptoms of his case he must make another guess and read another article. In this book, however, the discovery of any marked symptom will lead

directly to the diagnosis. Thus, if the patient is vomiting, in the chapter on Vomiting will be found its various causes and its diagnostic significance, and the differentiation of each form of this affection from another.

"The value of the book is increased by the preparation of two indexes, one of symptoms and the other of diseases.

"Basing his efforts upon the experience which he has had in both didactic and clinical teaching of large classes of students during the last twelve years, the author hopes that the work may in some degree lighten the labors of the general practitioner and student, and relieve the all-important subject of diagnosis of some of the difficulties which surround it. He has also endeavored to make the text serve as an aid to the rational use of his Text-book of Practical Therapeutics."

SYSTEM OF SURGERY. Edited by Frederic S. Dennis, M.D. Assisted by John S. Billings, M.D., LL.D. Profusely illustrated. Vol. IV.

New York and Philadelphia: Lea Brothers & Co., 1896.

This volume is, with possibly the exception of the first, the best that has been issued. The illustrations are admirable, and the editorial work (meaning by that the moulding of the divers elements of the book into a symmetrical whole) is particularly well done.

Dennis contributes the first article, upon Tumors. His classification is founded upon that of Gouley. To a practical surgeon it seems somewhat complex and with certain strange new terms which are confusing. A full consideration is given to the antitoxin treatment. Indeed, the whole ground of pathology and therapy is well traversed.

The chapter on Hernia is written by Bull and Coley. The treatment is more clearly and fully described than in any text-book yet published. The illustrations are admirably chosen.

Richardson, assisted by Cobbe, contributes a section on Surgery of the Alimentary Canal from the Esophagus to the Ileo-cecal Valve. This chapter could not be improved. All the well tried methods of technique are described.

The section on Appendicitis is contributed by Hartley. McBurney writes on the surgical treatment of this affection.

Pilcher contributes the article on the Alimentary Canal from the Ileo-cecal Valve to the Anus. In the treatment of Intussusception it would have been well to have described the modern technique of resection of the intussusceptum through a lateral opening in the wall of the bowel.

Abbé writes briefly on the Surgery of the Liver and Biliary Passages. Surgical Disorders and Diseases of the Uterus are considered by Polk. Johnson treats of Disease of the Ovaries and Tubes. A particularly useful chapter on Minor Gynecological Surgery is written by Coe. Symphysiotomy has been considered worthy of a special section, and has been exhaustively discussed by Lusk. Weir and Foote contribute an excellent but very brief article upon the Surgical Aspects of Goitre. Matas writes upon the Surgical Peculiarities of the Negro, an important subject, considering the large colored population in America, if these peculiarities are numerous or well marked. Diseases of the Female Breast are treated by Dennis. Halsted's technique is given as the best.

The book ends with a beautifully illustrated article upon the Roentgen Rays, by Keen.

This is the last volume of the System, and is likely to hold its own against any rival which will be published within the next few years. The work, though extremely unequal, is of a high order of merit. Essentially the teaching is practical and useful, and particularly in this last volume modern methods have been fully described and credited. The System is highly creditable to the editors, authors, and publishers.

MATERIA MEDICA AND PHARMACOLOGY. Comprising all the Organic and Inorganic Drugs which are and have been Official in the United States Pharmacopœia, together with Important Allied Species and Useful Synthetics. By David M. R. Culbreth, Ph.G., M.D. Copiously illustrated.

Philadelphia and New York: Lea Brothers & Co., 1896.

An examination of this volume by a practicing physician reveals the fact that it will prove much more useful to the druggist and the pharmacologist than to him who uses practical therapeutics by the bedside. It is copiously illustrated with good figures of nearly all the important medicinal plants, and the text is clear and concise in its description of their appearances and medicinal properties. Under the head of each drug a statement is made as to the portion which is employed in medicine; and its habitat, synonyms, popular name, and name in other languages than our own, are given. Careful directions are also given as to the manner in which the names of unusual drugs are to be pronounced. In many respects, in its description of the active principles of the various drugs and the crude drugs themselves, it resembles closely the information which can be

obtained from the National Dispensatory, although of course it is a much smaller volume —818 pages.

To students of pharmacy it will prove an invaluable aid. Its use among medical students will depend very largely upon the views held by the individual teacher as to what medical students should study concerning drugs: to those who wish to devote their time chiefly to therapeutics it will not prove serviceable, but among those who wish their students to obtain a thorough grounding in the botanical portion of materia medica it will no doubt win great popularity.

A MANUAL OF CLINICAL DIAGNOSIS BY MEANS OF MICROSCOPIC AND CHEMICAL METHODS: For Students, Hospital Physicians, and Practitioners. By Charles E. Simon, M.D. Illustrated.
Philadelphia and New York: Lea Brothers & Co., 1896.

The object of this octavo volume of 500 pages is to present to the classes of persons named in its sub-title the accurate methods of microscopical and chemical analysis as they are or should be employed in the practice of clinical medicine.

Nearly all the books on diagnosis which have been published heretofore have devoted themselves chiefly to the clinical side of the subject; whereas in this volume the purely symptomatic evidences of disease are almost entirely ignored, and the signs obtained by analysis thoroughly dwelt upon.

A careful examination of the volume shows that Dr. Simon has been careful to put himself in touch with all the recent work which has been done in this line, particularly in Germany and France, and we believe that he has produced a book which is at once a credit to himself and the subject of which he treats. Some of the colored plates which adorn the volume are very good, and the observations and the methods which the author makes and recommends are generally clear and concise. We note on page 72 there is evidently a mistake in regard to the description of the Fig. 22 in which "Daland's Hematokrit" is represented by the simple rubber tube which is used for sucking up the blood, without any other attachments.

AMERICAN TEXT-BOOK OF APPLIED THERAPEUTICS. For the Use of Practitioners and Students. Edited by J. C. Wilson, M.D., assisted by Augustus A. Eshner, M.D.
Philadelphia: W. B. Saunders, 1896.

This is a volume similar in appearance and arrangement to the other "American Text-books" in this series which Mr. Saunders has been publishing during the past two or three years. In all it contains 1326 pages, and, like its predecessors, is printed on handsome paper and with good type. There are forty-two contributors, many of whom have written more than one article. The only criticism of any weight which has ever been urged against the usefulness of such composite works is that they are necessarily uneven in the quality of the articles, and that a certain amount of overlapping of subjects is almost unavoidable. As a result of this, different views regarding the same subject may be found in different portions of the volume. The only way in which this can be avoided is by careful editorial supervision and by having the number of contributors as small as is consistent with the completeness of the work. If any criticism can be offered in relation to this volume it is that too many contributors have written for its pages and as a result many articles are exceedingly brief, in one or two instances not covering a page.

From beginning to end the newer method of spelling has been carefully adhered to, and the editor tells us in his Preface that he is entirely responsible for it and has introduced it notwithstanding the protests of some of his contributors.

The volume opens with an article upon Acute Poisoning, by Dr. I. E. Atkinson, of Baltimore, which is scarcely as exhaustive as could be wished. The various poisons considered are not classified upon a chemical basis, nor are they arranged alphabetically in the order of their consideration. We notice that, under the head of "Phosphorus Poisoning," nothing is said about the usefulness of permanganate of potassium, and that the danger of using sulphate of copper in full doses is apparently not recognized. It will be remembered that in Thornton's experiments, of the animals which received poisonous doses of phosphorus, those to which an emetic dose of sulphate of copper was also administered succumbed sooner than the others, the copper seeming to produce symptoms of poisoning more rapidly than the phosphorus. The statement is made, under "Antimony," that there is no physiological antidote to this drug. While this may be true, strictly speaking, if it is true practically there is almost no substance which can be considered as a physiological antidote to anything. In the discussion of aconite poisoning, we notice that digitalis is not recommended as strongly as it should be as an antagonist to monkshood, for it has been

proved by a great number of observers that digitalis is one of the purest physiological antagonists to aconite that it is possible to find in the realm of medicine. Under "Strychnine Poisoning" the use of nitrite of amyl for the purpose of controlling convulsions is not, we think, sufficiently emphasized.

The article upon Dengue is by J. W. McLaughlin, but a careful examination of the list of contributors to the volume fails to show this gentleman's name in the list. We presume that it has been left out by error. This article covers but little more than three pages.

The article upon Exanthemata, by Dr. George Dock, of Michigan, is much more exhaustive, covering thirty-eight pages, and deals quite thoroughly with the therapeutics of these disorders.

The editor, Dr. Wilson, contributes the article upon Enteric Fever, which is illustrated by a diagram showing the deaths from enteric fever before, during, and since the introduction of sewerage and water-supply in several of the large cities of the world; the prophylaxis as well as the actual treatment of the disease is carefully considered. The author has very distinct ideas as to the methods which should be employed in the treatment of this disease, and does not fail to make himself understood. Careful records are given, showing the results of his plan of treatment, which, it is well known, closely follows that of Brand. The editor also contributes the article upon Typhus Fever, Relapsing Fever, Cerebro-spinal Fever, and Migraine. The well known authority upon Cholera, Dr. Shakespeare, writes the article upon that subject. Dr. John Guitéras, formerly of the U. S. Marine Hospital Service, contributes the article upon Yellow Fever, and his wide experience with this disease will cause his article to be read with interest.

The important subject of Tuberculosis is considered by Dr. James T. Whittaker, of Cincinnati, in an article of seventy pages. The writer discusses both prophylaxis and actual treatment. He has evidently looked carefully over the literature in connection with this subject which has accumulated during the last few years, and has embodied the results of his investigations in this article. We confess, however, that we do not see very much value in the picture of the chair used on transatlantic steamers, which is printed on page 367, and we do not think sufficient attention has been paid in the article to the climatic treatment of this disease, although we appreciate the fact that a thorough discussion of this remedial agent would be impossible in so limited a space.

The article upon Syphilis, by Dr. Orville Horwitz, shows evidence of careful preparation and a basis of personal experience. For this reason it will prove of great value to the practicing physician.

In the article upon the Treatment of Dysentery, Dr. Johnston of Washington advocates strongly the use of high rectal injections.

The article upon Malaria is contributed by Dr. Laveran, whose name is so closely connected with the micro-organism of this disease; and it is very practical, although the author has won his reputation as a scientific investigator rather than as a practicing physician.

In the article upon Malarial Hematuria, by Dr. Dawson, it is interesting to note that this gentleman is evidently a believer in the use of quinine in this condition. He states that rapid cinchonism should be our first aim in its treatment, and almost entirely ignores the claim of many American and European physicians that quinine in this condition is capable of doing harm. We believe that while, in many instances, quinine is of great service, it cannot be used in all such cases with impunity, and we are sorry that Dr. Dawson has not presented the other side of the picture for the consideration of his readers.

The article upon Rheumatism, written by Dr. Stewart, of Montreal, is much like the paper he contributed to the System of Therapeutics edited by Dr. Hare some years ago.

The article upon Diabetes covers but eight pages and therefore cannot be a very exhaustive one. We note that its author, Dr. Stewart, does not seem to have any favorite method of treatment for diabetes aside from diet. The treatment of diabetes insipidus which he gives is equally lacking as to his personal views.

Dr. Stockton, of Buffalo, has contributed the article upon Diseases of the Stomach, and, as is well known, brings to his work the results of a large amount of personal experience and original investigation of this subject. His paper is well worthy of careful study and is one of the best in the volume.

The article upon Infant Feeding and the Digestive Disorders of Infancy is by Dr. Graham, of Philadelphia, who has prepared an exhaustive and careful paper upon these important subjects. We are glad to note

that Dr. Graham emphasizes the importance of well performed enteroclysis in cases of cholera infantum.

Dr. Mackenzie's article upon Disease of the Upper Air-Passages is a very practical one, in which minute details are given for the treatment of the affections discussed.

Dr. Forchheimer's article upon Diseases of the Heart is quite thorough, but scarcely as therapeutic as might be desired in a volume devoted to treatment.

The chapter upon Diseases of the Blood and Ductless Glands was written by Dr. Osler, whose contributions upon this subject during the last few years are so well known; while Dr. Tyson writes upon his specialty, Diseases of the Kidneys.

The article upon Nervous and Mental Diseases, by Dr. Eskridge, was evidently prepared not only from personal experience but with a careful examination of current literature, and we are glad to note that this gentleman, who is doing so much to advance the study of neurology, has contributed so good a paper to a volume which will have so much influence with the general practitioner.

The article upon Diseases of the Skin and its Appendages, by Dr. Stelwagon, is one of the longest in the book and is very practical.

The last article in the volume is upon Pregnancy and its Disorders, by Dr. Theophilus Parvin, whose excellent style in medical writing is so well known to those who keep themselves in touch with medical literature in his particular line.

We doubt not that the book will be, as it deserves to be, a popular one, and we congratulate the editor upon the completion of a task which he set himself some years ago and which he has brought to a conclusion, during the press of large professional duties, with much skill and success.

INDEX CATALOGUE OF THE LIBRARY OF THE SURGEON-GENERAL U. S. ARMY. Second Series. Vol. I: A to Azzurri.
Washington: Government Printing Office, 1896.

The Index Catalogue in its first series is so well known to literary medical men that a description of the second series, which is gotten up on a precisely similar basis, is entirely unnecessary. The present volume, which is designed to keep up to date the references to medical literature, contains an index of 6127 volumes and 6327 pamphlets. It also contains 7884 sub-titles of separate books and pamphlets, and 30,384 titles of articles and periodicals. It contains 828 pages.

Correspondence.

LONDON LETTER.

BY ST. CLAIR THOMSON, M.D., M.R.C.P., F.R.C.S.

The substance of the report of the Vaccination Commission is much as I foreshadowed it would be in my last letter. This report is hailed by a leading anti-vaccinationist as "a victory all along the line," while all the journals of the profession express their content with the "absolute unanimity of the Commission on the great question as to the protective influence of vaccination against smallpox." I certainly have no intention of wading through the evidence which has led to these conflicting conclusions, for I note that in actual weight the volumes in which it is printed turn the scale between thirteen and fourteen pounds, while the number of questions put and answered amounted to 31,398! Had one the time, some amusing extracts might be made from the replies of the anti-vaccinationists, and certainly these gentry can never again complain that they have not had a sufficient hearing. One received and answered 1961 questions, although he confessed that "he had no medical knowledge whatever," and "did not make the least profession of any." Some were not so modest, for one witness was of opinion that "under certain circumstances syphilis might induce leprosy." Most of them "had thought the matter out for themselves." Hence a stenographer opined that "smallpox was not a disease, but simply a constitutional crisis;" an engine-smith "had a grave suspicion that vaccination had introduced consumption into his family;" a hatter and hosier, whose child had a cervical abscess, forbade the doctor to open it, and attributed it to vaccination—"no amount of medical men will ever eradicate that opinion from my mind," he added. He was asked if he had never heard of abscess apart from vaccination, and he answered, "I cannot say that I have." A homœopathic doctor reported a case of syphilis after vaccination; he had not inquired into the history of the father, and had not even seen him. Another homœopath gave, as results of vaccination, one case of malignant disease, three of infantile paralysis, and one of acute peritonitis. In the last case there was complete obstruction ending in death, no post-mortem was made, and in forty five years of "active practice" the doctor had never seen a case of internal strangulation. We can now under-

stand why the Commission has been sitting for seven years.

The conclusion of the whole matter appears to be that the claims of vaccination have been fully established. In the words of the report, "It is to be hoped that our report will stimulate belief in the efficacy of vaccination." The first conclusions as to vaccination are: that it diminishes the liability to be attacked by the disease; that the protection it affords is greatest during the years immediately succeeding the operation of vaccination; and that though after the lapse of some nine or ten years the protective potency diminishes, it still remains considerable "and possibly never altogether ceases." All the various explanations as to the decrease of smallpox advanced by the opposers of vaccination—improved sanitation, isolation, etc. —are duly considered and rejected. The Commissioners declare that unless vaccination be accepted as the explanation of the control of smallpox which has taken place since Jenner's days, then the whole subject remains "an unsolved mystery."

In their enthusiasm in recommending Jenner's discovery to the world, medical men have, probably, a little overstated the case in its favor. This is brought out in the report, which acknowledges that there are risks attending the operation, especially when antiseptic precautions are neglected. The recommendation of the employment of calf-lymph will at least remove the objections of those who fear that vaccination may be the means of transmitting human disease, and does not in any way invalidate the belief in the vaccine. Again, the value of notification, isolation and sanitation is emphasized—they are important auxiliaries in the extermination of smallpox. Those who trust in vaccination too blindly as a panacea have possibly been rather apt to neglect these aids. I am inclined to think that some of us may be misled in the same way with regard to the diphtheria antitoxin; at least, I hear from Italy that the "*heilserum*" has been received with such enthusiasm as a specific that isolation, disinfection and general sanitation have in consequence fallen into so much neglect with regard to diphtheria that the number of cases is daily increasing! At the same time the records of cures are trumpeted forth to an admiring world!!

The anti-vaccinationist who hailed the report as a victory for his party "all along the line" was probably misled in his conclusion by the proposed alteration in the administrative laws. The Commission are not satisfied that direct compulsion is right or expedient. In fact, they are inclined to think that it is wrong to meet a conscientious objection with fines and imprisonment, and that such methods only conduce to the manufacture of "martyrs" and to a stronger objection on the part of the public to submit their children to vaccination. While proposing to do away with direct compulsion, they suggest that the vaccination of the population should be secured by other means. Amongst the latter are the use of calf-lymph, as already mentioned; the performance of the operation in domiciliary visits, instead of at a central station; and the permission on the part of the parents to make a "statutory declaration" as to their objection to vaccination. So as to avoid this latter being taken advantage of by lazy and thoughtless individuals, it is recommended that it should involve on the part of the parent quite as much trouble as accepting the free vaccination.

Is this proposal to give further liberty to the individual in matters of public welfare a step in advance or a retrogressive one? Education has been accepted as a national question, and parents are fined who do not send their children to school. Private wells are at times closed by the authorities, and the population is compelled to accept (and pay for, too!) the water which is offered instead. In many cities private slaughter-houses are prohibited, and all cattle must be butchered in the municipal abattoirs. If the individual is not allowed to drink the water he prefers, to kill his own sheep, and to let his own child run free, is he not to be compelled to have it vaccinated so that it does not spread a foul disease? Or are we sufficiently advanced to trust in the "sweet reasonableness" of Demos, and is the hope of the Commission not a vain one that the substitution of gentler measures will "stimulate belief in the efficacy of vaccination"? Gibbon held that "persuasion is the resource of the feeble." But it may be objected that Gibbon was too deeply imbued with the Roman method of government to be taken as a modern guide on such a question, and to his dictum it may be quoted that "persecution is the method of the stupid."

The proposal to abrogate the compulsory clauses of the Vaccination Acts has been mistaken to indicate a confession that confidence in the value of Jenner's discovery has been shaken. A study of the report shows that this is not so. The value of vaccination

has been confirmed; it is only proposed to modify the manner in which its adoption has been enforced.

To be President of the British Association for the Advancement of Science—to give it its full title, for it is currently referred to as "the British Association"—is about the highest of scientific honors. Our profession is therefore well satisfied to see that this year the office is so well filled by Sir Joseph Lister, who happens at the same time to be the President of the Royal Society. At the annual meeting in Liverpool he selected for his inaugural address the Interdependence of Science and the Healing Art, simply and clearly telling the "fairy tale of science" in so far as it concerned our profession in the last fifty years, so that it could be understanded of the people. To us it is of course a twice-told tale, so that it is sufficient to give an outline of his speech. His theme was the success which has attended the surgeon and physician in the last half-century in their struggle with disease and the results of injury. He told his audience that "the practice of medicine in every department is becoming ever more and more based on science as distinguished from empiricism." Somewhat curiously, as it seems to me, he began at the end by referring to the very latest discovery of science! After showing the increased precision to be obtained by the aid of the Roentgen rays, he reminded his hearers that the present year is the jubilee of anesthesia in surgery. But not only have anesthetics been useful in relieving pain; their uniform action, not only on all members of the animal kingdom, but also on vegetables, is an indirect illustration "that living matter is of the same essential nature wherever it is met with on this planet." I am glad he referred to the subject of antiseptics, for I remember that when I was his interne he used to say that the day would come when the public would get to know of antiseptics, and would insist on their medical men being able to use them, and that, moreover, it would be criminal not to employ them! At that time the realization of this statement seemed very far away, but twelve years have seen a rapid diffusion of his principles and he himself acclaimed at a period when innovators like himself were still toiling in oblivion. On antiseptic methods in surgery, as Sir Joseph said in his address, he had hitherto refrained from speaking in public, partly because the details were too technical for a general audience, but "chiefly because he felt an invincible repugnance to what might seem to savor of self-advertisement." There is unavoidable regret in reading that "the latter objection now no longer exists, since advancing years have indicated that it is right for him to leave to younger men the practice of his dearly loved profession." He then simply told the story of the gradual evolution of his principles, from the day when he first became acquainted with the researches of Pasteur and found that carbolic acid was an "antiseptic." He passed on to narrate the triumphs of bacteriology and the romantic story of phagocytosis. There is no Section for Medicine in the Association over which Sir Joseph was presiding—it is not, like its German analogue, a society of "*Naturforscher und Aerzte*"—so he concluded by hoping that he has shown that "medicine was no unworthy ally of the British Association; that while her practice was ever more and more based on science, the ceaseless efforts of her votaries to improve what had been fittingly designated *Quæ prosunt omnibus artes* were adding largely to the sum of abstract knowledge."

In one of the Sections of this same Association a paper was read on "Metric Measures," which, it was said, would doubtless be legalized in this country before long. The British love of compromise was well shown by the suggestion of the reader of the paper that there was no need to sweep away the method now in force, as the two systems might be combined, and the retention of old forms would make our untaught population familiar with new principles. Hence the old names should be applied to new equivalents, and half a kilogramme would be called a pound! This semi-reactionist was eclipsed by Sir Frederick Bramwell, who one year occupied the position in the Association now filled by Sir Joseph Lister, and who came boldly to the defense of our old and delightfully illogical system. He is reported to have said "that in point of ease of calculation and in point of mental arithmetic our ordinary English weights and measures and vulgar fractions would any day enable any person of ordinary intelligence to do his work more accurately and more speedily than a man who employed decimals, and still more than a man who employed decimals plus the metric system." I suppose the more useful, practical and simple an innovation is, the more it meets with opposition. Sir Frederick's contention was "received with applause;" but then his audience was chiefly British and possibly felt that our system of measures was

a purely insular production and far removed from any suspicion of wearing that despised title of "Made in Germany."

Let me again remind your readers that the British Association will meet in Quebec next year, shortly before the gathering of the British Medical Association in Montreal. While still on the subject of these gatherings, which are called by the profane "scientific picnics," it should be noted that the International Congress of Librarians will take place in London next fall. Already 300 delegates from America have sent in their names, but, from all I have heard from English visitors to the States, these delegates will not find here anything they do not know already in the art of the librarian.

"Defense or not defense, that is the question," or, rather, one of the questions, which is very much with us since the meeting of the British Medical Association in Carlisle. Those in favor of the proposal urge that the Association is the only professional corporation which can take up the subject of the defense of its members, and that it can do so effectively and relatively cheaply. Those who oppose affirm that the Association is a scientific body and not a trades union, that defense and such like matters should be left to defense unions and other societies, and that if the Association undertakes all sorts of sundry duties—prosecuting quacks, opposing medical aid associations, drawing up "codes of ethics," etc., etc.—it will cease to fulfill the purposes for which it was founded, lose the esteem of the public, and only lower the dignity of the profession. The matter is, I understand, to be submitted to the various branches, and I presume the Council must abide by the result whether it prove the inauguration of a still more prosperous future—according to some—or the commencement of the *débâcle*, according to others.

There appears to be a wide feeling of unrest and desire for some sort of change; whether "change" and "refórm" will turn out to be the same thing, only time will show. The annual attempt at "editor-baiting" was more vigorous than usual, although not more successful. The *Medical Press* has come to the support of Mr. Ernest Hart in a vigorous leading article, in which the writer "feels it to be a duty to express his opinion that the editor of the *British Medical Journal* acted as an honorable journalist should do, and as the editor of the *Medical Press* would do under similar circumstances." The editorial "we" also considers "that all advertising dodges, whether by emblazonment on hotel door-posts, on race-course buildings, or on insurance prospectuses, are, if pursued beyond a very limited degree, wholly incompatible with the honor and dignity of the profession, and none the less so because they are occasionally resorted to by practitioners whose high standing and monetary position ought to allow of their cultivating self-respect. We do not expect that journalistic condemnation will ever prevent some people from cultivating business by discreditable means, but it is, nevertheless, the duty of the editor, when called on, to say emphatically what means *are* discreditable."

"Mental Therapeutics" are every day receiving more attention of a discreet character, doubtless stimulated by the researches, without the excesses, of the school of hypnotism. Many interesting points are touched on in an address given by Dr. Schofield before the Harveian Society. He suggests that the conscious mind is a very small part of the whole of the psychic force in us, and that it bears the same proportion to the vast subconscious mind which the surface of a coral island bears to the stupendous structure hidden away below the ocean, and of which it forms only the topmost layer. Of the workings of this subconscious mind many interesting examples are given. An authoress has remarked that the pen of a ready writer seems to dip itself into the ink at the right moment, to form of itself all the words, and even to select different words to begin each sentence and to avoid terminating them with prepositions, while all the time the conscious mind is deeply occupied with the plot. The marvels of playing a brilliant piece on the piano while at the same time conducting a vigorous flirtation show also the greatness of our unconscious powers, especially when we remember that Sir James Paget has pointed out that in rapid playing the finger moves twenty-four times a second, each movement involving at least three muscular acts, which, if multiplied by ten, gives 720 muscular impulses per second for both hands. This subconscious mind is often deepening impressions when we least suspect it, so that it has been well said in Germany that skating is learned in summer and swimming in winter. An oft-heard tune we will unconsciously hum, whereas if we try to hum it consciously it goes from us. For the same reason we can often remember things better when we cease to make the effort to do so with our conscious minds.

Now mental therapeutics can be applied

to the body in one of three ways: (1) by the unconscious mind indirectly—in spiritual or physical influences or surroundings; (2) by the unconscious mind acted on by the conscious indirectly—in rousing faith in persons, remedies, or places, etc.; and (3) by the unconscious mind acted on by the conscious by direct effort—in determination to get well, to shake off illness, ignore pain, etc. With regard to the ailments in which mental therapeutics are useful, they are a powerful means of cure in all disease processes, while in hysteria and allied neuroses they are the only reliable means of permanent efficacy.

Sir Dyce Duckworth, without dwelling on the value of mental therapeutics, has pointed out their use by means of the clock, showing the great effect in cases of persistent vomiting in giving the liquid food in teaspoonfuls every five minutes by the clock. If the patient is told that the food thus given will be retained, and if he can see the clock clearly from his bed, it will probably be successful, for at the exact time the subconscious mind enables the stomach—probably by some inhibitory power over the vomiting centre in the medulla—to retain the food. The extraordinary value of the clock in labor in producing regular pains is apparently not fully appreciated. What a fountain of health it may also become to both mother and child! The nursery without it is a scene of confusion and bad management, which ceases when mother and nurse have learned that the child must be nursed in the day every two hours by the clock, and every four hours at night, and never at other times. The real value of the clock in this as in other cases is truly scientific, and depends for its potent effects on rapidly formed accurate psycho-physical habits, or artificial reflexes in the brain. It is still much too commonly imagined that hysteria is simply a form of malingering, and the very word "hysteria" is uttered with contempt. A disease due to the imagination is not necessarily an imaginary disease, but can produce functional and every organic disturbance. The late Dr. Sutton once remarked: "If a man is so ill as to say he is ill when he is not ill, he must be very ill indeed." Indeed, it has been well said: "We think as we feel, or think we feel, and we feel as we think. If we feel a pain, we think we are ill; and if we think we are ill, we feel ill." As to the employment of mental therapeutics, we must strive to wrap up our suggestions in objective treatment, directed ostensibly and vigorously to the simulated disease.

To those of a psychological turn of mind I would recommend as well worthy of perusal a small work of 230 pages entitled "The Crowd; a Study of the Popular Mind," by Gustave Le Bon, and published by T. Fisher Unwin. The subject is interesting to every one, and particularly to legislators and statesmen at the present time when "the voice of the people" is the final court of appeal on numbers of points on which they are just now utterly unable to form an opinion. The power possessed by a crowd is thus accounted for by Mr. Le Bon: "An isolated individual knows well enough that alone he cannot set fire to a palace or loot a shop, and should he be tempted to do so he will easily resist the temptation. Making part of a crowd, he is conscious of the power given him by numbers, and it is sufficient to suggest to him ideas of murder or pillage for him to yield immediately to temptation." This feeling may be worked upon for good or evil, and is the basis upon which "suggestion" operates when applied *en bloc*. How the orator makes use of it is well shown in Emerson's essay on "Eloquence," and the peculiar contagium of a crowd is charmingly and perfectly described —though not psychologically analyzed—in Guy de Maupassant's exquisite little work entitled "*Sur l'Eau*."

It is somewhat curious that sanitation should have made so much progress in this country, and that the public health should be so well maintained, when we consider how loath the State is to interfere for the public weal. Our journals lately have shown the varieties in strength of the diphtheritic antitoxin serums placed on the market from different sources. In Germany there is a State institution for the standardizing and supervision of this remedy. The member of our Government whose concern this was supposed to be, was approached with reference to the establishment of a similar system of control in this country. The Minister declined to interfere, pleading as an excuse that the department of which he is the official head had only to do with the prevention of disease, and not with its treatment.

"Thymus-feeding in Exophthalmic Goitre" formed the subject of one of the papers read at the last gathering of the British Medical Association, and, although only three cases were reported, the result in all was a restoration to health. The dose was half an ounce to an ounce three or four times a week. That the results were not mere coincidences was shown by the observation of one case which

did not respond to the gland, although it had always previously been relieved. This was found to be due to the glands having been taken from a full-grown sheep. On giving calf's thymus, most urgent symptoms were at once relieved, especially dyspnea, palpitation, and tremors. The thymus gland has been found hypertrophied in Graves's disease by a number of observers. Joffroy has remarked that this "revival" of the thymus was found almost exclusively in this disease. It was clear, therefore, that this gland played a part in the disease, and that there were grounds for believing that its hypertrophy was compensatory, its internal secretion serving to neutralize the toxic agent which caused the disease. It is noteworthy that Graves's disease is almost unknown in infancy when the thymus gland is present. The fact that the thyroid gland is more active during infancy than it is later would render the infant more liable to hyperthyroidization were there not some counteracting influence which the thymus gland possibly supplied. There is some evidence of antagonism between the thyroid and thymus glands. Thyroid extract increases tissue waste. On the other hand, the thymus gland is most developed during infancy, and in hibernating animals at each period of hibernation, which pointed to this gland exerting an inhibitory influence over waste. This apparent antagonism supplies a hypothetical explanation to the mode of action of thymus in the treatment of exophthalmic goitre—a disease most probably due to excessive activity on the part of the thyroid gland.

Three chief forms of cretinism are described: One variety is embryological, due to thyroid non-development or partial development, and analogous to acardia or anencephalism. A second variety is due to atrophy of the thyroid parenchyma after a serious illness, and analogous to the atrophy of the testicles after mumps. The third variety is due to the goitrous degeneration of the thyroid body, and the following shows how this form is rapidly disappearing from this country. Not fifty years ago a little hemmed-in valley in Somersetshire—mild, damp, dirty, and densely wooded with orchards—contained 540 inhabitants. In this number were included 4 goitrous idiots, 26 goitrous imbeciles, 5 goitrous deaf-mutes, and 200 or 300 goitrous villagers, with low intelligence and defective speech. The above creatures were stunted and thick-set, with large heads, abundant coarse hair, low foreheads, small sunken eyes, broad faces with flat noses, large mouths with thick lips, and rickety limbs, the expression laughing or pained or vacant, the gait waddling. They were mostly weak, mild and harmless, and, if mischievous, only so from irresponsible ignorance. Several green, stagnant pools existed in the place; the air was necessarily stagnant, and often reeking with rotten vegetation; young strangers became goitrous on settling there; intermarriage was unusually common, and many similar cases existed in an adjoining parish.

Dr. Hugh Norris, who made this observation nearly half a century ago, still lives in the same neighborhood, and reports that one solitary cretin now survives of about fifty years of age, the march of civilization having apparently stamped out the disease.

The occurrence of cancer at a much earlier age than we have been in the habit of expecting to find it, is now being only too frequently recorded. A case where it attacked the esophagus of a woman of twenty-five was recently shown at the Laryngological Society, and now a case has been published of scirrhus of the breast in a young woman of twenty-two.

From some very interesting articles in the *British Medical Journal*, by an Italian surgeon, it appears that the reports of "mutilation" of prisoners by Abyssinians are only too true. This "mutilation," when it concerned black troops in the service of Italy, took the form of cutting off the right hand and the left foot; when Italian soldiers fell into the hands of some of these savages they had their genital organs entirely removed. A number of these natives who underwent this mutilation of hand and foot survived, and 141 submitted to secondary amputation of these extremities in order to leave them a useful stump. Not one death followed these 141 amputations, which were executed at the base hospitals or at Massowah, and fully ninety per cent. of the cases healed rapidly by first intention. The ten per cent. which suppurated were generally the result of the impatience and restlessness of these black soldiers, who would not be satisfied unless they undid the bandages and examined the stumps for themselves. Such good results were no doubt due to the simple and effective way in which antisepsis was carried out. With the exception of the carbolic-acid lotion for the instruments, no other antiseptic was used but perchloride-of-mercury lotion of the strength of 1 in 1000. All instruments were boiled twice a day to make sure. All the perchloride gauze used, both for swabs and

dressings, was for further security boiled also. No other swabs were used but those made out of perchloride gauze, and these were touched only by the operating surgeon or his assistant. No other hand came in contact with them, either for preparing or handling them. All ligatures and sutures, exclusively of silk, were boiled freshly. The dressings consisted of iodoform dusting, covered by boiled perchloride gauze squeezed out by the operating surgeon himself, and put loosely and freely over the stump, and over this a thick layer of dry perchloride cotton wool and a gauze bandage. The anesthetic used was exclusively Merck's chloroform; and whether as a result of the quality of the drug, or the elevation (7000 feet over the level of the sea), or the race, patients have rarely taken chloroform better and easier.

Large numbers, of course, bled to death; and still more of those who suffered the more terrible form of mutilation. The amputated organs were skewered on spears, and —*horribile dictu*—were carried in triumph as trophies to be presented by the Abyssinians to their wives.

A very detailed account has been published of the case of a medical man who was attacked with acute septicemia, and recovered under treatment by antistreptococcus serum. That the latter was really the curative agent appears from the history of the case, which was a long one; for relapses occurred when treatment was discontinued too soon, and recovery set in after each renewal. A curious point is that there was no local manifestation of the place of entry of the poison. The doctor, however, had an abrasion on the right forefinger. He had attended a fatal case of puerperal septicemia just before he commenced to feel sick, and he frequently complained that "he could not get rid of the awful smell."

The same journal in which the above appears contains the record of a failure of the tetano-toxin. This is the more disappointing as the case developed in hospital, and the patient received the treatment as soon as possible. Instead of checking the disease, the injections seemed actually to increase the number of spasms. The patient was out at sea when the wound occurred through which infection must have taken place. It is difficult to understand how the tetanus bacillus reached him there.

The "orificial surgeon" has not yet evolved in our midst, and as I see that considerable fun is made of him on your side I cannot resist quoting an amusing paragraph on the type of individual from the witty pen of the editor of *The Practitioner*. He says:

"Give me a place to stand upon," said Archimedes, "and I will move the world." In medical practice some philosophers take their stand upon the stomach, others on the liver, others again on the nose. Now there has arisen—in America, it is hardly necessary to say—a school of seekers after truth who look for the cause of all diseases in the rectum. If, after persevering search, they fail to find it there, they seek for it in some other natural opening of the body. "Orificial surgery" has attained the dignity of a cult, and of course has a journal in which the miracles of its hierophants are recounted. The creed is simple enough. To your orificialist the beginning of therapeutic wisdom is to dilate the rectum. That portion of the human anatomy is, in fact, treated by these learned persons as the savage treats his fetich; it is punished whenever anything goes wrong in the economy. If dilatation fails, the rectum can be faradized, and as a last resource excised. Should the disease still prove refractory, the other orifices can be attacked one after the other. If there is anything left of the patient when orificial surgery has done with him, he is probably cured, or at any rate "order reigns" in his system as in a captured city after the inhabitants have been put to the sword. Let me, by way of example, give a brief account of one of the triumphs of the system, as reported some little time ago in the *Journal of Orificial Surgery*. The patient was a robust, blue-eyed, fair-haired Swedish girl, aged twenty-six, who suffered from a cough and various nervous troubles. The treatment was as follows: The patient had to take up her abode in the same house as the doctor, who then laid regular siege to the disease. He first poured in a hot fire of drugs; next he brought up his heavy artillery in the form of galvanization and faradization; then he tried to carry the place by storm by dilating the rectum. The enemy, however, was difficult to dislodge, and the siege was continued with galvanization of the solar plexus and both vagi, nasal sprays, and instillation of verbascum oil into the ears. Finally came a combined attack in force; the hymen was excised, there were further dilatations and faradization, and at last the doctor's skill and determination were rewarded with complete victory. There can hardly have been a nook left where a reflex irritation could hide itself. These advanced methods of treatment will hardly, I think, become acclimatized among us; they can flourish only in the ampler ether, the diviner air of the New World. The orificial surgeons are, I am quite willing to believe, honest enthusiasts, but what are we to think of the patients? The matter suggests some curious reflections. Our American cousins are—as we have frequent opportunities of learning from themselves—above all a "brainy" people, and their nervous machinery is possibly more complex and more delicate than ours. John Bull's coarser clay may, however, have in it certain compensations; at least it is something to be thankful for that he is not "brainy" enough to understand the subtle philosophy which teaches that the true source of a cough is to be found in the rectum.

PARIS LETTER.

By Arthur R. Turner, M.D. (Paris).

The former chef de clinique of Trousseau, Professor Peter, who died not long ago, was wont to say that no woman suffering from

any disease of the heart should, if unmarried, marry; if married, have children; and if with child, be allowed to go to full term.

In a clinical lecture delivered recently at the Pitié Hospital, Professor Jaccoud criticised this statement as too absolute. He thought that under some conditions a physician consulted as to the advisability of the marriage of a female patient might consent. In the first place, opposition to the wishes of the patient might in itself be most unfavorable. Then, too, it should be ascertained whether the cardiac lesion had already produced any such symptoms as dyspnea or hemoptysis. Even in this latter case it would be well not to be too severe when it was shown that such occurrences had been rapidly ameliorated by suitable treatment, and when the social position of the patient would allow a proper hygiene.

What, however, Professor Jaccoud especially recommends, is that the patient should be placed upon a partial milk diet from the second or third month of pregnancy, two liters of milk being taken daily. This tends to prevent not only the cardiac symptoms already mentioned, but also the presence of albumin in the urine.

Professor Jaccoud declares that he authorizes marriage in cases which have not previously shown any very serious symptoms, on condition that such a regime be followed during pregnancy.

Ever since the outbreak of the plague at Hong-Kong, Dr. Yersin, formerly of the Pasteur Institute in Paris, has been studying the disease in China, and experimenting with a serum manufactured by him. At a recent meeting of the Academy of Medicine, Dr. Monod reported, in Dr. Yersin's name, a case treated with great success. The patient was a young Chinaman of eighteen years who showed the first symptoms of the disease in the forenoon. At 3 in the afternoon a characteristic bubo was noted in the groin. At 5 a first injection of ten cubic centimeters of serum was made; a second at 6; and a third at 9 in the evening. Improvement began at midnight; the fever declined, and the bubo diminished in size. At 6 in the morning the bubo was no longer painful, and the fever had gone. Two days later the patient resumed his usual life.

At the same session of the Academy of Medicine a paper was presented by Messrs. Surmont and Delval, of Lille, on the Toxic Power of Gin, which is consumed in great quantities in northeastern France, on the Belgian frontier. When the bad reputation which gin has is considered, the results at which the essayists arrive are rather surprising. They state that gin is to a great degree protected against adulteration from the fact that it must be sold clear and colorless. It contains but very little fusel-oil, less than one per cent. in most cases. Almost all the alcohol contained in it is ethylic, and the harm which gin undoubtedly produces is due to the quantity taken, rather than to any special noxious qualities. In fact, it is much less harmful than many so-called naturally produced liquors.

French convicts wishing to avoid working for a few days have many ingenious methods of producing artificial diseases. One method used in some of the settlements is the following: The mucous membrane of the mouth is pricked with a sharp pin of a certain size. The nose and mouth are then tightly closed and efforts at expiration made until the cheek begins to swell. This method was too successful in one case, producing so much emphysema of the cellular tissue that the man died of suffocation before tracheotomy could be performed. Another method of obtaining relief from active service during some days consists in passing under the skin of the axilla or popliteal space a thread covered with dental tartar. The wound necessitates hospital treatment, and on recovery anchylosis of the joint or muscular retraction is frequently sufficiently serious to incapacitate the patient for the remainder of his life. An attack of jaundice is produced by smoking fifty grammes of tobacco which has been soaked in oil and dried.

During a few days spent at a seaside resort it has been possible for me to obtain some idea of the life of a country doctor in France. The nearest physician to the village where I was staying, about three miles away, would usually ask 2½ francs, or 50 cents, a visit. His office fee would be one franc, or 20 cents. One man with whom I had some conversation on the subject said that the peasants always sent for a medical man in the evening, in order to avoid leaving their work during the day.

TREATMENT OF SYPHILIS.

To the Editor of the THERAPEUTIC GAZETTE.

DEAR SIR:—Having read with very considerable interest Dr. Lindsay's communication on the treatment of syphilis, I shall feel obliged if you spare me space for a few re-

marks anent the statements therein contained. In a broad general way I agree with his method of treatment, once treatment has commenced; but as to his advice regarding the management of cases up to the time when secondaries appear—or, in his words, "when diagnosis is positive"—I venture to take strong exception. I may here mention that I have been for sixteen years connected with the Government Lock Hospital in Dublin (containing an average of seventy patients the year round), and therefore may presume to speak with some authority on the subject. During that time I had very ample opportunity of witnessing the deplorable results following delayed treatment, and from my experience I could not speak too strongly of the serious mischief caused by delay in the early treatment, whether through the fault of the patient or of the doctor, by, as Dr. Lindsay says, "waiting until secondaries appear." I will here give one instance of the vast difference between early and delayed treatment—an instance which occurred a good many years ago.

Two gentlemen consulted me. In age, health, and general circumstances, they were as nearly as possible alike. They contracted the disease from the same woman, on two consecutive nights. Number one consulted me the moment he noticed any sign of trouble, and I forthwith put him under special mercurial treatment. In due course (two months afterwards) he got a slight roseolar rash and slight sore throat, but both quickly vanished under treatment. No symptom of the disease remained after five months, and he has remained in perfect health up to the present date and is the father of a healthy family. Number two consulted me just as the secondary rash began to appear (say about six weeks after connection). He was covered with a profuse papular eruption and had all the concomitants of a severe dose of syphilis. Placed under a rigid course of treatment, it was nine months before he made a good recovery. I strongly advised him to continue under treatment for a further term of at least eighteen months, and not to marry until two years after final cessation of treatment. He continued his medicine for six months, and though during the ensuing year he got "reminders" he contracted marriage at the expiration of that year, with the result that his first child was still-born. He then resumed treatment, and two years afterward had a healthy child. Since then he has had no return of the disease.

This is a fair example (from among many), for the absolute accuracy of which I can vouch, of the results from early and delayed treatment.

I may here mention that one of our best authorities (to my mind, probably the best in Europe), Mr. Jonathan Hutchinson, of London, has stated that if treatment is commenced early after inoculation and continued regularly, no secondary rash will appear, and if treatment is continuously prolonged for a due length of time none of the sequelæ of syphilis will ensue. To my mind, a judicious course of mercury does no harm, whether the patient has syphilis or not. Indeed, from watching my own patients, I would say that constitutionally it serves them, and, given guardedly, is one of our best tonics. Therefore my opinion is that if the practitioner is in doubt he should at once put the patient under special treatment. As you know, the average practitioner is not competent to diagnose the initial lesion, and consequently it would be a deplorable mistake to allow the system to be permeated by the poison of syphilis for six weeks, especially as the treatment, if properly carried out, can do no harm, even in the event of the sore turning out to be a simple one. Of course it is desirable that the physician be able to diagnose the various natures of sore, but unfortunately he is not.

As to Dr. Lindsay's method of treatment when commenced, the time it should extend over, and the form of administering the various drugs, I generally agree with him. Space forbids me entering into a detailed examination of the pros and cons of the various methods of administering mercury, and I shall merely mention that with private patients I find it most reliable to give it internally. As to the precise salt to use, the matter does not seem one of vital importance, but in my own practice I use blue mass combined with quinine and opium. I should strongly object to the hypodermic administration of mercury, as there is no good to be obtained thereby, and much danger to be incurred. If it is required to get a patient quickly under the influence of mercury, this is readily done within twenty-four hours without risk by inunction.

Apologizing for trespassing at so much length on your space,

I am yours,

M. A. Donnelly, F.R.C.S.,
Visiting Surgeon Westmorland Lock Hospital.
Dublin, Ireland.

—THE—

Therapeutic Gazette.

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Original Communications.

*SPARTEINE SULPHATE IN SURGICAL ANESTHESIA.**

BY GILBERT GEOFFREY COTTAM, M.D.,
Rock Rapids, Iowa.

It is not within the scope of this article to discuss in detail the action of chloroform on the heart; it is sufficient for present purposes to know:

(*a*) That fatal cardiac syncope occasionally occurs during the initial stages of anesthesia; and

(*b*) That in prolonged operations, or in operations upon debilitated subjects, marked depression, shown by diminution of pulse-volume and increased rapidity of the beat, is of comparatively frequent occurrence.

To find an agent capable of preventing this depressing influence of chloroform, has long been a great desideratum. Digitalis, alcohol and strychnine have been used with varying success, not sufficient to justify habitual use for the purpose specified.

About a year ago the writer began using sparteine sulphate. Encouraged by the very positive results yielded thereby, he has employed it in a number of surgical cases, the beneficial effect of the drug being clearly shown in almost every instance.

* Read at the meeting of the Sioux Valley Medical Association, held at Sioux Falls, S. D., May, 1896.

A word here as to the pharmacology and action of this compound. It is the neutral sulphate of a neutral, liquid, volatile alkaloid obtained from the flowers of *Sarothamnus Scoparius*, or common broom plant, of which the former name was *Spartium Scoparium*. Scoparius, the crude drug, has two distinct properties: diuretic, and cardiac stimulant. Its two active principles, *scoparin* and *sparteine*, respectively represent these, scoparin being diuretic only, and sparteine a cardiac stimulant without diuretic action.

The effect of sparteine on the heart was first noticed by Laborde, whose observations were subsequently confirmed by Griffe, Garaud, and Masius. Germain Sée first drew attention to its great value in cardiac affections; and finally, in America by Cheves Bevill, in France by P. Langlois and Maurange, the remarkable properties of the sulphate as a cardiac stimulant in chloroform narcosis were observed and described.

Bevill (THERAPEUTIC GAZETTE, vol. xix, p. 71) uses it in doses of one-fifth of a grain by the mouth, given thirty minutes before the chloroform is administered. He describes two cases, both doing well throughout prolonged anesthesia.

Langlois and Maurange (*La Semaine Méd.*, August, 1894) give from three to four centigrammes of sparteine sulphate and one centigramme of morphine hypodermically, fifteen minutes before the commencement of anesthesia. They have done this one hundred and twenty times on the human subject. In many of these cases the patients suffered from heart disease or had to undergo prolonged operations, such as laparotomy, herniotomy, and reduction of dislocations. In all of them the heart-beats continued full and perfectly regular.

The present writer's mode of procedure is to inject hypodermically one-tenth of a grain of sparteine sulphate ten minutes before the anesthesia is commenced. Then, if the operation is protracted, one-fifteenth of a grain is injected during its progress. These doses have been found ample to secure the desired effect, although they are much smaller than is generally considered necessary.

The following seven cases illustrate the points enumerated. Sparteine sulphate was used in every instance in the manner just described, and the patients themselves, from various causes, were such as would be peculiarly susceptible to the depressant influence of chloroform, hence admirably adapted to demonstrate the properties of sparteine:

CASE I.—Radical cure of irreducible inguinal hernia. Age of patient, twenty-five. Time, one hour. Tedious, difficult dissection. Pulse full and strong throughout.

CASE II.—Amputation of breast and dissection of axilla for carcinoma, in patient aged fifty, much emaciated. Time, thirty minutes. Pulse 70, strong and regular both during and after operation.

CASE III.—Lumbar incision for perinephritic abscess. Patient aged nineteen, exhausted from hectic; every evidence of systemic intoxication at time of operation. Temperature 100° to 103° on day preceding. Pulse weak and somewhat irregular, but improved markedly after administration of sparteine. No depression after operation.

CASE IV.—Extensive enucleation of tuberculous cervical glands. Time, one hour and ten minutes. Patient aged thirty. In this instance but one hypodermic was given. At no time could the slightest increase in the frequency of the pulse be detected.

CASE V.—Curettage and sequestrotomy for necrosis of inferior maxillary, of several years' duration, in a man aged sixty-three. Although there was every sign of advanced arterio-sclerosis, no untoward effect of the anesthetic was discernible. Two hypodermics were given.

CASE VI.—Amputation two inches below shoulder-joint for tuberculous osteitis of humerus, of five years' duration. Systemic septic infection. Pulse about 100. No depression, the pulse improving in volume.

CASE VII.—Exploratory laparotomy to determine nature and extent of growth involving liver and right kidney. Patient aged sixty, much emaciated, and weak from constant vomiting. The pulse did not vary during the operation, and was distinctly fuller afterwards.

A study of these cases and many others of a minor nature has caused me to form these conclusions:

1. That in sparteine sulphate, administered hypodermically before the commencement of anesthesia, in the dose of one-tenth of a grain, repeated according to the nature of the operation and the condition of the patient, we have a safe, efficient, and prompt heart-stimulant in chloroform narcosis.

2. That it is not necessary either to combine with morphine or to use in larger dosage than specified above.

3. That, other things being equal, there is less shock and prompter reaction with its use.

THE PHYSIOLOGICAL ACTION OF SOLANUM CAROLINENSE.

By E. Q. Thornton, M.D.,
Demonstrator of Therapeutics in the Jefferson Medical College of Philadelphia.

It is not my intention to discuss the value of *Solanum Carolinense* in the treatment of disease, although it has proved to be a useful drug, this having been the object of papers by Drs. Napier (*Virginia Medical Monthly*, 1880), Maxwell (*Indiana Medical Journal*, 1894), Bondurant (*Medical News*, 1895), Carr (Therapeutic Gazette, 1895), and Potts (Therapeutic Gazette, 1895), but to present the results of a brief study of its physiological action.

The soft extract made by Parke, Davis & Company was administered by the mouth and hypodermically to dogs, rabbits, guinea-pigs, pigeons, and frogs. I was unable to observe any peculiar effects in any of these animals except frogs (*Rana esculenta*); therefore the study was confined to experiments upon them.

General Action.—When the soft extract is injected hypodermically into the posterior lymph-space in doses of about three milligrammes to the gramme weight of the batrachian, respiration becomes gradually slower and labored, then gradually returns to the normal in about three hours as the effect of the drug passes off. If the drug is given in toxic doses the respiration becomes slow, shallow, and irregular, death resulting from respiratory failure. We are somewhat surprised to find that *Solanum Carolinense*, a drug belonging to the natural order Solanaceæ, as do belladonna and hyoscyamus, has no effect upon the circulation, as is shown in Experiments V, VI, and VII.

The effect upon the nervous system is most marked, depressing the cerebrum and powerfully stimulating the spinal cord. After receiving an injection of the drug into the posterior lymph-space, the frog becomes quiet and apparently stupefied, and retains the normal posture, but if irritated it will make very long leaps, alighting usually upon its belly, although frequently upon its back, with its fore and hind legs extended in tetanic spasms, the hind limbs being more decidedly affected than the fore limbs. The limbs are thrown into spastic extension each time the animal hops or attempts to hop, these spasms lasting about ten to thirty seconds. Sharp jars, a sharp tap, and pin-pricks bring on the spasms, although they are not then nearly so marked as when the animal leaps or attempts to leap. Division of the spinal cord does not prevent the spasms. The frog recovers from the condition of spasm in from three to five hours if the dose has not been so large as to be lethal. Lethal doses are preceded by the condition above related, but finally depression or exhaustion takes the place of excitement or stimulation, and the animal lies limp, failing to respond to any stimulus.

Respiration.—In the experiments upon the respiration below recorded, it will be seen that the respiration became labored and slower after the drug had been administered, and when large doses were given respiration ceased before the heart stopped. Experiments I and II illustrate the effect of moderate doses, and III and IV the effect of toxic doses, upon respiration:

Experiment No. I.—Weight of frog, 34 Gm. Dose, 3 milligrammes to one gramme frog-weight:

Time.	*Respiration.*
11.48	96 to minute.
11.50 Injected 90 Mg. soft ext.	
12.02	86, labored.
12.13	93, labored.
12.27	83, labored.
1.00	70, somewhat irregular.
2.30	46, irregular.
3.00	80, regular.
3.30 Frog entirely recovered	90, regular.

Experiment No. II.—Weight of frog, 56 Gm. Dose, 2 milligrammes to one gramme frog-weight:

Time.	*Respiration.*
11.44	80 to minute.
11.50	98
11.55	100
12.00	120
12.05	128
12.09 Injected 110 Mg. soft extract.	
12.20	86, labored.
12.22	86, labored.
12.27	52
12.40	50
1.40	100, regular.
2.40 Frog recovered from effects of drug.	80, regular.

Experiment No. III.—Weight of frog, 32 Gm. Toxic dose, 5 milligrammes to one gramme frog-weight:

Time.	*Respiration.*
10.45	102 per minute.
10.55	100,
11.00 Injected 160 Mg. soft ext.	
11.10	45, labored and shallow.
11.15	56, labored and shallow.
11.25	60, labored and shallow.
11.40	55, labored and shallow.
11.50	46, labored and shallow.
12.00	48, labored and shallow.
12.10	22, labored and shallow.
12.18	6, very shallow.
12.22	Ceased.

Frog did not recover from effects of drug.

EXPERIMENT No. IV.—Weight of frog, 30 Gm. Large toxic dose, 10 milligrammes to one gramme frog-weight:

Time.	*Respiration.*
11.45	94 to minute.
11.47	Injected 300 Mg. soft ext.
11.54	46, shallow, irregular.
12.00	6, shallow, irregular.
12.07	Heart beating feebly..... Ceased.
12.14	Heart still beating feebly.
12.24	Heart ceased.

Circulation.—In Experiment No. V the hearts were carefully removed, placed in normal salt solution, their rates counted, then one placed in a saline solution of the drug, the other remaining in the salt solution.

In Experiments VI and VII the frogs were brained and pithed, the heart exposed *in situ*, its beats counted, and the drug was administered into the posterior lymph-spaces. These experiments appear to show that the drug is without effect upon the heart.

EXPERIMENT No. V.—

NORMAL SALT SOLUTION.

Time.	*Heart-beats.*
12.10	52
12.15	52
12.20	50
12.25	50
12.30	46
12.40	36
12.50	28
1.10	16
1.20	12
1.30	8
1.40	4
1.50	Stopped.

ONE-PER-CENT. SOLUTION SOFT EXTRACT.

(Heart beating 60 to minute in salt solution alone.)

Time.	*Heart-beats.*
12.12	62
12.17	60
12.22	60
12.27	58
12.32	56
12.42	52
12.52	48
1.12	36
1.22	30
1.32	22
1.42	14
1.52	8
2.02	2
2.07	Stopped.

EXPERIMENT No. VI.—

NORMAL SALT SOLUTION.

Time.	*Heart-beats.*
10.50	58
10.55	56
11.00	52
11.10	48
11.20	32
11.30	20
11.40	10
11.45	8
11.48	Stopped.

THREE-PER-CENT. SOLUTION SOFT EXTRACT.

(Heart beating 52 to minute in pure salt solution.)

Time.	*Heart-beats.*
10.53	52
10.58	54
11.03	50
11.13	46
11.23	38
11.33	23
11.43	14
11.50	4
11.55	Stopped.

EXPERIMENT No. VII.—Frog, weight 30 Gm., pithed at 4.45:

Time.	*Pulse.*
4.50	34
5.00	34
5.10	Injected 90 milligrammes soft extract.
5.20	35
5.40	40
6.00	28
6.20	26
6.40	24
7.00	26
7.20	24
7.40	22
8.00	14
8.20	16
8.40	16
9.00	9
9.02	Stopped.

Frog, weight 30 Gm., pithed at 4.52:

Time.	*Pulse.*
4.57	52
5.05	48
5.25	48
5.45	46
6.05	42
6.25	40
6.45	35
7.05	30
7.25	32
7.45	32
8.05	32
8.25	30
8.45	20
9.05	Upper part of heart only beat 4.
9.10	Heart stopped.

Nervous System.—That *Solanum Carolinense* is a powerful stimulant to the spinal cord and a depressant to the brain, there can be no doubt, as in all frogs to which it was given stupor and tetanic spasms, very similar to those produced by morphine, were manifested. The convulsions are not prevented by division of the cord, and can be readily produced in frogs in which the cord is divided. Experiments Nos. XI, XII and XIII seem to indicate that response to acids is lost before tactile sense.

EXPERIMENT No. VIII.—Weight of frog, 40 Gm. Dose, 3 milligrammes to one gramme frog-weight:

10.55: 120 milligrammes of extract of *Solanum Carolinense* introduced into lymph-space.

11.12: Remains perfectly quiet, and stupid. but when stuck with pin hind legs are thrown into spastic extension. As it jumps, legs are thrown into spasm lasting about five seconds. Leaps farther than normal.

11.30: Spasms more rigid and last for about fifteen seconds. Stupor deepened.

12.00: Spasm still more rigid, lasting for about twenty-five seconds, and, as leaps are made, lights on back as frequently as on belly, with fore and hind legs in spastic extension.

2.00: Has returned to normal state.

EXPERIMENT No. IX.—Weight of frog, 52 Gm. Dose, 3 milligrammes to one gramme of frog-weight:

12.20: Spinal cord divided, and brain destroyed.

12.50: Recovered from shock.

1.00: Injected 150 milligrammes soft extract into posterior lymph-space.

1.40: Thrown into tetanic spasms by sharp taps or pin-prick, or jars.

It was possible to cause these spasms for several hours.

The following experiment illustrates the power of the drug to first stimulate and then depress the spinal cord when given in poisonous quantities:

EXPERIMENT No. X.—Weight of frog, 34 Gm. Dose, 10 milligrammes to one gramme of frog-weight:

11.00: 340 milligrammes soft extract given into posterior lymph-space. Frog stupid, and tetanic spasms were marked when attempts were made to jump. The stupor deepened and the spasms became more and more marked for an hour, when evidences of general relaxation began to be apparent until the animal refused to respond to stimuli of any kind. This exhaustion became pronounced in the hind limbs before fore limbs, as was shown by the fact that when the animal attempted to flee the hind legs remained relaxed and were dragged after the body.

The frog was dead at 2 o'clock.

EXPERIMENT No. XI.—Weight of frog, 47 Gm:

10.15: Medulla divided, brain destroyed.

11.00: Recovered from shock. Reflexes, tested by dangling foot in acidulated water, responded in ten seconds.

11.25: Reflexes failed as tested with acidulated water in two minutes.

11.40: Completely relaxed.

11.45: Injected 140 milligrammes soft extract.

12.15: Failed to react to acidulated water, but responded at once from prick with pin, in two minutes.

12.16: Slight tetanic spasms when tapped.

EXPERIMENT No. XII.—Weight of frog, 45 Gm. Dose, 3 milligrammes to one gramme of frog-weight:

3.50: Cord cut and brain destroyed.

4.40: Recovered from shock.

4.50: Reflex manifested to acidulated water in five seconds.

5.17: Reflex manifested to acidulated water in seven seconds.

5.30: Injected 130 milligrammes soft extract.

5.35: Reflex manifested in acidulated water in six seconds.

5.45: Reflex manifested in acidulated water in five seconds.

6.15: Reflex manifested in acidulated water in seventeen seconds.

7.00: Reflex failed in acidulated water, but responded at once to prick with pin. Frog thrown into spasms by taps or jars.

EXPERIMENT No. XIII.—Weight of frog, 39 Gm. Dose, 3 milligrammes to one gramme of frog-weight:

4.15: Medulla divided, brain destroyed.

5.15: Recovered from shock.

5.16: Reflex manifested in four seconds.

5.18: Injected 100 milligrammes soft extract.

5.35: Reflex action manifested in four seconds.

6.20: Reflex action manifested in sixteen seconds.

6.40: Reflex action manifested in seventy seconds; responded at once to prick with pin. Frog thrown into spasms by tap.

Briefly stated, the drug depresses respiration, has little or no effect upon circulation; depresses the cerebrum, and stimulates the cord. The reaction to acids is lost before tactile sense (and the same may be said of heat).

It may be incidentally mentioned that when the soft extract of *Solanum Carolinense* was administered to a healthy man in single doses of thirty grains, or daily doses of sixty grains, no apparent effects were produced.

PERTUSSIS: ITS TREATMENT.

By F. Gundrum, M.D.,
Sacramento, California.

The remedies for whooping-cough can be numbered by the hundreds, and perhaps by the thousands, and still the journals have a considerable amount of their space occupied with new remedies, or old ones changed and modified so as to be renewed and improved. This alone is sufficient evidence that we have not reached perfection in the treatment of this most troublesome and not infrequently fatal disease. So long as we are in the dark as to the pathology of a disease, so long must our treatment be imperfect, experimental, and empirical. Empirical treatment means to theorize, hypothecate, guess, and try, until you stumble on something good, and hold fast to that until you stumble on something better.

There is much to be learned in regard to this disease, and perhaps then we may find a proper remedy. Some other children's diseases are more fatal, but there is not one that produces half so much misery and suffering as this terrible complaint. In pertussis, bacteriology has done little or nothing as yet to give an intelligent direction to proper therapeutic measures, and we are still compelled to rely on empiricism. That no reliable and satisfactory remedy or method of treatment has yet been found is attested by the new remedies or methods brought forth in current medical literature.

I will not impose upon the valuable space of the Gazette or test the patience of the reader by telling how many remedies I have tried, more than to say they are numerous, but will give only those I have become satisfied with, and will continue to use until a more scientific and more satisfactory therapy is discovered.

Probably the best way to illustrate the action of the remedies I use is to give one or two cases recently treated.

Case I.—Helen A., age six, white, although large enough for her age, and fairly plump, was always rather pale and seemingly had little endurance. She never had any severe illness, but had had a good many minor ailments. She was exposed to the whooping-cough, and came down with the disease. In due course of time severe spasmodic cough set in. The usual home remedies were tried, but the child grew rapidly worse, and I was sent for April 26. I found her a tolerably well developed and apparently well nourished girl, with fairly red lips but white skin; temperature 102°; pulse 120. A thorough examination did not discover any organic affection. After her severe paroxysms of coughing, which occurred every hour or two and exhausted her very much, she lay helpless for a half-hour or more. Her tongue being heavily furred and breath foul, she was ordered:

℞ Calomel, gr. j;
Ipecac, gr. j;
Sacch. lact., ℈ j.

M. Make eight powders. S.: One every hour till all are taken, to be followed by castor oil.

Also, after motion of bowels:

℞ Sodii brom., ʒ ij;
Atropinæ, gr. ⅙;
Syr. aurantiæ, ad f ℥ iij.

M. Sig.: Teaspoonful every three hours, to be continued until the pupils are well dilated, unless the spasmodic cough ceases before.

In addition, two grains of quinine were to be taken every three hours, alternating with the above mixture until the cough should be controlled or until hearing was perceptibly affected.

April 27, the mother thought she was better—did not act as if so exhausted, and the intervals between paroxysms were considerably longer. The temperature had dropped to 99.5° and the pulse to 112.

On the 28th she was up, seldom had a coughing fit; temperature 99°; pulse 100. The following night she had only one paroxysm. Next day she begged to be allowed to go out and play with her mates, and her wish was granted. After the 30th she had no more paroxysms; ate well and slept well.

My success was ruinous to my practice in the neighborhood, as a physician declared (which was approved by the wise old ladies) that, as I had arrested the evolution of the disease, the child would never be well again. This prediction, however, was a failure, as the little girl is in better health than ever before.

Case II.—Willie Le M., age eleven, very small for his age, very thin and extremely nervous; never had very good health. Very bright at school, but had to be kept out now and then on account of nervousness. His little brother, eight years old, took whooping-cough from a neighbor's child, and Willie took it from him. On August 1 the spasmodic element of the disease manifested itself, and the mother took Willie to a homœopathic practitioner, who gave him some medicine. Two days later all the symptoms

became severely aggravated—the boy was so "put to it" for breath the mother thought he would die. She concluded homœopathy was not strong enough, and went to a regular physician. The first one being busy with a patient, she rushed out and came to my office. The boy was crying; his breathing was slow, very labored, and attended with a shrill, stridulous sound during both inspiration and expiration. He took a paroxysm of coughing in the office, and it was about the worst I ever saw. The pulse was 130, temperature 102.8°. The face remained somewhat cyanotic after the paroxysm was over. He could scarcely speak, on account of pain in the larynx. His voice was very hoarse, low-toned, and now and then interrupted. The diagnosis of severe whooping-cough with intercurrent laryngo-tracheal inflammation was made.

As the laryngo-tracheal inflammation was of the greater immediate importance, I turned my therapeutic efforts in that direction first. After four days we had this under good control. The whooping-cough, however, was reigning in all its glory. Frequent severe paroxysms occurred day and night, and the boy was unable to leave bed. His eight-year-old brother was up and around, taking his homœopathic pellets, with just a moderate attack. The boy was put on the following:

℞ Sodii brom., ʒ ij;
Atropinæ, gr. ⅙;
Syr. pruni virginianæ, q. s. ad f℥ iij.

M. Teaspoonful once in three hours. To be continued until pupils are well dilated.

And

℞ Quinia sulph., ℈ iiss;
Syr. yerbæ santæ co., f℥ iij.

M. Sig.: Teaspoonful once in three hours until hearing is affected.

This was continued for two days and nights before much effect was produced, but on the fourth day we had the disease under control and the boy played with his comrades in the house. After a week there was no more paroxysmal cough and very little cough of any kind. He was allowed to leave the house, and medicine was discontinued.

In my early practice I used the tincture of belladonna—also quinine, principally by inhalation. Then, on account of the trouble I had with the atomizers that other people had, I gave up this method of administering quinine, and gave it internally. Then I commenced giving both belladonna and quinine, and finally I added the bromide of sodium. With this combination I have been well satisfied. But it must be given thoroughly and steadily, and pushed until the full effects of both remedies are obtained, if the disease does not yield before. I have no fixed proportion, but judge by the individual patient how much to begin with, and either increase or diminish the amount, according to its effects. If I get the effect of the atropine before that of the quinine, and the disease does not yield, I push the quinine, and *vice versa*.

Have I had any failures with this plan of treatment? Yes. I do not offer it as a panacea, but it has served me better than all the other remedies I have used.

There are cases that will not bear the remedies, especially the quinine. If the stomach will not tolerate this drug, we must try to get it into the system some other way.

It is assumed that the dietary and hygiene are properly attended to.

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*TUBERCULOSIS: ITS PREVENTION AND CURE.**

By John William Moore, M.D., Univ. Dubl., F.R.C.P.I.,
Diplomate in State Medicine and Ex-Scholar, Trin. Coll., Dubl.; Senior Physician to the Meath Hospital; Professor of Practice of Medicine in the Royal College of Surgeons in Ireland.

I. THE BACILLARY ORIGIN OF TUBERCULOSIS.

We may accept certain facts relating to tuberculosis as proved, and therefore shut out from the field of discussion. For example, the essential unity of the process which we call "tuberculosis" must be admitted. Once the bacillary origin of tubercle is established, the morbid process must be regarded as identical, whether its battle-field is the lungs, the pleura,† the membranes of the brain, the liver, spleen and kidneys, the intestines, the mesenteric and other lymphatic glands, the joints, or the skin. The life history, morphological characters and pathogenic bearings of the *Bacillus tuberculosis* of Koch have been so thoroughly, so minutely studied as to leave no room for doubt as to its causal relationship to tuberculosis of every kind and in every part of the body.

Another point which has been removed from the pale of discussion by the discovery of the *Bacillus tuberculosis* has reference to the influence of *heredity* upon the transmission of the disease. The influence of heredity in reality makes itself felt through "a congenital disposition towards the disease, a disposition

* Abstract of remarks made on opening a general discussion at the annual meeting of the British Medical Association, July 31, 1896.

† Professor Eichhorst: *Correspondenz-Blatt für Schweizer Aerzte*, July, 1895.

that has to be looked for, naturally, in the organization of the respiratory system" (Hirsch). The great German epidemiologist is, no doubt, speaking of pulmonary consumption, but surely these views are equally applicable to the other manifestations of bacillary tubercle.

Again, the question of the transmission of tuberculosis by infection may be looked upon as definitely settled, although the exact methods and paths of infection may still be open to discussion. We now hold that tuberculosis is undoubtedly an infective disease; that the introduction of the virus—the *Bacillus tuberculosis*—is the one exciting cause of the disease. But it is equally true that there are many predisposing causes, which arrange themselves under the two great headings: *congenital* and *acquired*. As examples of the former, we may instance inherited delicacy of the lymphatic glands, vulnerability of the lungs, feebleness of defense on the part of the cells of the body. The presence of these conditions constitutes the "tubercular diathesis."

II. EARLY SIGNS OF CONSUMPTION.

The relative value—diagnostic and prognostic—of certain signs and symptoms which herald the onset of pulmonary consumption, would be a suitable topic for discussion. I can do little more than name some of them.

The so-called "tuberculous red line" along the gums may mean much or little. Its absence encourages; its presence, on the other hand, may be due to other causes than tuberculosis. I have seen it in the neighborhood of carious teeth, or where "tartar" incrusted the crown of a tooth. Its diagnostic value is thus qualified.

Clubbed finger-tips are common to phthisis with many other wasting diseases or conditions which interfere with nutrition, such as valvular or other heart affections.

Morning sickness and want of appetite for breakfast are common forerunners of consumption. To the same category belong distaste for fatty foods and capricious appetite.

Myotatic irritability of the pectoral muscles and of the platysma myoides (myoidema) is a valuable sign. So also is tenderness on pressure over an apex of a lung which is the seat of commencing tuberculous deposition.

Interrupted inspiration (*respiration saccadée; entre coupé*, jerking, or cogwheel, inspiration) is a sign of doubtful value. It is so often present in nervous youths or in nervous and chlorotic girls that its diagnostic importance is largely discounted.

Among the earliest physical signs of phthisis we should include lessened movement of the chest-wall (expansion), an abnormally clear percussion note, deficient vesicular breathing, relative or absolute intensity of the heart-sounds over the affected apex, and relative or absolute intensity of the pulmonary second sound.

III. THE DAMAGE WHICH TUBERCULOSIS DOES.

It would not be easy to exaggerate this point. Through the kindness and co-operation of the Registrars General of the three divisions of the United Kingdom, I am enabled to lay before the Section a series of tables, which bear eloquent testimony to the destructiveness of tubercle.

REGISTRATION OF DEATHS.

TABLE I.—ENGLAND AND WALES.

Years.	Number of Deaths from				Total Number of Deaths from all the foregoing causes.	Total Number of Deaths from All Causes, including Tuberculosis.	Percentage of Deaths caused by Tuberculosis of all Forms.
	Tabes Mesenterica.	Tubercular Meningitis.	Phthisis.	"Other Forms of Tuberculosis, Scrofula."			
1881	7,402	7,176	47,541	3,785	65,904	491 935	13.4
1882	8 246	6,959	48,715	4,040	67,960	516,654	13.2
1883	7,683	6,986	50,053	4,268	68,990	522,997	13.2
1884	8,367	7,124	49,125	4,592	69,408	530,828	13.1
1885	6,825	6,874	48 175	4,224	66,158	522,750	12.7
1886	8,265	7,073	47,872	4,865	68,075	537,276	12.7
1887	7,034	6,581	44,935	4,971	63,521	530,758	12.0
1888	6 774	6,743	44,242	4,917	62,682	510,971	12.3
1889	7,645	6 627	44,738	5,205	64,235	518,353	12.4
1890	7,632	6,889	48,466	5,443	68,430	562,748	12.2
1891	7,301	7,180	46,515	5,911	66 907	587,925	11.4
1892	7,135	6,691	43,323	5,866	63,015	559,684	11.3
1893	7,867	6,725	43,632	5,518	63,742	569,958	11.2
1894	5,763	6,345	41,041	5,552	59,301	498,627	11.9
Tot'ls	103,939	95,993	649,179	69,217	918,328	7,461,164	12.3 Mean

TABLE II.—IRELAND.

Years.	Number of Deaths from				Total Number of Deaths from all the foregoing causes.	Total Number of Deaths from All Causes, including Tuberculosis.	Percentage of Deaths caused by Tuberculosis of all Forms.
	Tabes Mesenterica.	Tubercular Meningitis.	Phthisis.	"Other Forms of Tuberculosis, Scrofula."			
1881	1,166	935	10,027	856	12,984	90,035	14.4
1882	1,062	1,005	10,258	771	13,096	88,500	14 8
1883	1,120	978	10,775	901	13,774	96 228	14.3
1884	1,064	1,014	10,583	785	13,446	87,154	15 4
1885	1,047	1,066	10,709	811	13,633	90,712	15.0
1886	1,120	1,007	10,694	835	13 656	87,202	15.6
1887	1,047	954	10,329	806	13,136	88,585	14.8
1888	997	896	9,812	815	12,540	85,892	14.6
1889	1,055	815	9,951	811	12,632	82,908	15.2
1890	918	788	10,176	897	12,779	85,850	14.9
1891	950	824	10,038	1,000	12,812	85,999	14.9
1892	1,116	856	10,048	916	12,966	90,044	14.4
1893	971	855	9,869	969	12,664	82,821	15.3
1894	958	611	9,626	930	12,125	83,528	14.5
Tot'ls	14,591	12,634	142,895	12,103	182,223	1,225,548	14.9 Mean

TABLE III.—SCOTLAND.

Years.	Number of Deaths from				Total Number of Deaths from all the foregoing causes.	Total Number of Deaths from All Causes, including Tuberculosis.	Percentage of Deaths caused by Tuberculosis of all Forms.
	Tabes Mesenterica.	Tubercular Meningitis.	Phthisis.	"Other Forms of Tuberculosis, Scrofula."			
1881	1,084	1,815	7,739	637	11,275	72,325	15.6
1882	1,060	1,835	8,012	701	11,608	72,989	15.9
1883	1,002	1,070	8,401	619	11,092	76,891	14.4
1884	972	1,275	7,915	633	10,795	75,168	14 4
1885	952	1,219	7,922	631	10,724	74 607	14.4
1886	1,064	1,249	7,959	670	18,942	73,640	14 9
1887	982	1,224	7,418	651	10,275	74,546	13.8
1888	849	1,186	7,044	646	9,725	71,174	13.7
1889	851	1,163	7,098	610	9,722	73,238	13.3
1890	838	1,140	7,660	656	10,294	79,004	13.0
1891	858	1,242	7,361	680	10,141	83,573	12.1
1892	807	1,112	6,765	634	9,318	75,545	12.3
1893	968	1,185	6 921	727	9,801	79,641	12.3
1894	754	1,150	7,108	717	9,729	71,112	13.7
Tot'ls	13,041	17,865	105,323	9,212	145,441	1,053,453	13.8 Mean

is easy to see that tuberculosis is more destructive to life in Ireland than it is in Scotland, and in Scotland than in England and Wales. Of all the deaths registered in the fourteen years, 1881–1894, tuberculosis caused 12.3 per cent. in England and Wales, 13.8 per cent. in Scotland, and 14.9 per cent. in Ireland. It will further be observed that a remarkable decline in the percentage death-toll from tuberculosis is taking place in England and Wales, as also in Scotland, whereas there is little change in Ireland.

The malign influence of town-life on the fatality from tuberculosis is clearly brought out by a comparison of the statistics relating to Dublin and Belfast with those which refer to Ireland at large.

The city of Brussels has long enjoyed an unenviable notoriety for the prevalence of tuberculous affections. We are, therefore,

TABLE IV.—*Showing the Number of Deaths registered in each of the Poor Law Unions, or Superintendent Registrars' Districts of Dublin North, Dublin South, and Belfast.**

Years.	Dublin North Union.						Dublin South Union.						Belfast Union.					
	Number of Deaths from					Total Number of Deaths from All Causes.	Number of Deaths from					Total Number of Deaths from All Causes.	Number of Deaths from					Total Number of Deaths from All Causes.
	Tabes Mesenterica.	Tubercular Meningitis.	Phthisis.	"Other Forms of Tuberculosis, Scrofula."	All the foregoing causes.		Tabes Mesenterica.	Tubercular Meningitis.	Phthisis.	"Other Forms of Tuberculosis, Scrofula."	All the foregoing causes.		Tabes Mesenterica.	Tubercular Meningitis.	Phthisis.	"Other Forms of Tuberculosis, Scrofula."	All the foregoing causes.	
1881	84	68	528	29	709	3,973	83	90	601	46	820	5,419	107	118	889	52	1,166	5,436
1882	115	62	509	12	698	4,071	89	86	704	40	919	5,534	99	117	899	53	1,168	5,871
1883	130	54	556	39	779	4,126	103	84	770	70	1,027	5,925	123	123	936	67	1,249	6,215
1884	105	63	506	25	699	3,821	139	113	749	70	1,071	5,734	85	121	921	36	1,165	5,448
1885	88	74	557	33	752	4,209	126	101	728	57	1,012	5,838	128	132	999	82	1,341	6,683
1886	120	55	535	56	766	3,939	142	79	727	76	1,024	5,426	140	136	1,041	68	1,385	5,833
1887	102	56	586	51	795	4,556	118	100	675	71	964	6,146	154	116	956	61	1,287	6,426
1888	110	48	478	31	667	3,771	91	102	637	77	907	5,084	121	110	982	75	1,288	6,379
1889	127	69	503	57	756	3,957	128	82	671	76	957	5,019	192	91	1,074	70	1,427	6,459
1890	101	68	543	53	765	3,965	104	69	706	106	985	5,205	151	91	1,143	74	1,459	7,336
1891	102	58	495	76	731	3,819	93	77	746	145	1,061	5,295	157	114	1,133	87	1,491	7,111
1892	147	56	551	69	823	4,466	114	123	737	146	1,120	5,740	207	164	1,192	93	1,656	7,566
1893	123	67	541	51	782	4,044	117	87	755	135	1,094	5,270	149	121	1,102	112	1,484	7,461
1894	106	35	529	52	722	3,694	99	73	692	112	976	4,892	142	84	1,056	83	1,365	7,245
Tot'ls	1,560	833	7,417	634	10,444	56,351	1,546	1,266	9,898	1,227	13,937	76,527	1,955	1,638	14,32[illegible]	1,013	18,929	91,469

The first of these tables has reference to England and Wales at large. The second is for Ireland at large. The third is for Scotland at large. In the fourth table, the facts relating to the urban populations of Dublin and Belfast are set out.

The tables are strictly comparable with each other. They refer to the fourteen years, 1881–1894, inclusive. From these tables it not surprised to find that in the twenty-four years ending with 1890 nearly one-fourth (23.1 per cent.) of all the deaths were brought about by tuberculosis, 15.7 per cent. being referred to pulmonary consumption, 4.6 to tubercular meningitis, 1.9 to tabes mesenterica, and 0.9 per cent. to other forms of tuberculosis. It will be observed that consumption has been, in Brussels, much more destructive to life than all the ordinary zymotic diseases put together (8.7 per cent.), or than diarrhea and enteritis (12.5 per cent.), or than bronchitis and pneumonia (13.6 per cent. of the total mortality).

* The population of these districts in 1881 and 1891, respectively, was as follows:

	1881.	*1891.*
North Dublin Union	142,981	148,996
South Dublin Union	202,264	200,709
Belfast Union	239,283	289,860

IV. MODES OF INFECTION.

Dr. Arthur Ransome, in his recently published work on The Treatment of Phthisis, has so clearly described the routes by which the body is invaded by tuberculosis that I cannot do better than transcribe his words: "It was ascertained," he says,* "even before the discovery of the bacillus, that the virus of tubercle might be introduced into the body at almost any point, but with various prospects of spreading generally through the system. Thus, (*a*) when inoculated into the skin, either through a purposely made abrasion or through a sore, it would usually be arrested at the first lymphatic gland; and it would then often be discharged from the body by suppuration. (*b*) It has been shown to be possible for it to enter by the genital tract, and thus we may have either infection of the mother, or congenital disease of the offspring; but both these accidents are probably of very rare occurrence. (*c*) The organism may undoubtedly enter by the alimentary canal, and there can be little doubt that this is one of the commonest sources of abdominal phthisis. Lastly, (*d*) the virus may be breathed into the air-passages in the form of tuberculous dust."

With Dr. James B. Russell we may conclude that "Tuberculosis in man is caused by infection, either (1) through the excretions or discharges from infected animals, including man himself, or (2) the milk of infected animals, including his own species, or (3) the flesh of infected animals."

Statistics go to show that it is pulmonary consumption which carries off the greater number of the victims of tubercular infection. Of all the deaths due to tuberculosis, nearly three-fourths are caused by the pulmonary form. It follows that the virus of tubercle is in large measure derived from phthisical patients, and that, if we are to control tuberculosis, we must destroy—not indeed the victims of phthisis, but the virus as it comes from them. It is well known that the poison of consumption does not come off in the breath, or in the emanations of the skin, like the poison of typhus. It is in the expectoration of the phthisical that the bacillus swarms. Each sputum carries within it boundless possibilities of mischief. In a word, tuberculosis is infectious indeed, but in a limited and special sense. Even in the sputum the bacilli are imprisoned and powerless for evil, so long as it remains *moist*. As soon, however, as it dries, it is broken up into a microscopic dust which reeks with a deadly poison—the spores and bacilli of tubercle. These are diffused through the atmosphere, and, if not destroyed by sunlight and fresh air, are breathed in by susceptible individuals, who in this way become infected. Nor is inhalation the only pathway of infection. The bacillus-laden dust may settle on articles of food, and on the surface of milk or water, and be *swallowed*. Unless taught to do otherwise, also, the consumptive is very likely to swallow his own sputum, and so to reinfect himself.

"The other sources," says Dr. Russell,* "from which man may derive the infecting bacillus, are the milk and flesh of diseased animals. . . . Cooking tends to diminish the risk, but in the case of milk there is no such safeguard interposed, owing to the habit of the country to consume it raw. The primary seat of tuberculosis in children is so frequently in the bowels and their related glands, and milk forms so large and essential an element in the food of children, that we cannot avoid the conclusion that it is to them a frequent source of infection."

V. THE PREVENTION OF TUBERCULOSIS.

The foregoing considerations suggest how much may be done to *prevent* tuberculosis.

The hygiene of the dwelling-house claims our first attention. It should stand on a dry subsoil, freely exposed to fresh air and daylight or sunshine.

The character of the meat and milk supply of the people should be subjected to the strictest investigation by officers under the control of the sanitary authorities.

By any or by all means, the poisonous sputa of consumptives must be destroyed.

The pernicious process happily described as "dusting" (Russell) must be avoided. Bed-clothes should be exposed to the sunshine, or daylight, in the open air. The room should be cleaned with a damp cloth or duster at frequent intervals. Its windows should be as widely opened as the weather will permit, and all available sunshine should be allowed to flood its innermost recesses. Once the patient has left the infected chamber for good, the carpets, curtains and bed-coverings should be disinfected by exposure to superheated steam under high pressure; all woodwork should be carefully washed with carbolic soap and warm water; the floors and walls should be rubbed with fresh bread,

Loc. cit., page 14.

* *Loc. cit.*, page 15.

and afterwards freely sponged with corrosive-sublimate solution (in strength 1:1000 or 1:2000), or a one-per-cent. solution of chlorinated lime, or a carbolic solution of 1 in 40 (two and a half per cent.).

Those predisposed to tuberculosis should lead an active, open-air life. They should breathe a pure atmosphere by night as well as by day. Close attention should be paid to the dietary, which should include—besides milk—eggs, fish, butchers' meat, nourishing soups, and fresh fruits and vegetables in seasonal succession. Strict punctuality in meal-times is essential. As a rule, stimulants are not required, and should not be taken except under medical advice and subject to frequent revision. "Change of air" is a desirable aid in the preventive treatment of tuberculosis, particularly in the case of town-dwellers. But the change should be to a well built, well sewered, well ventilated house standing on high and dry ground, in the open country, or mountain slopes, or near, but not too near, the seashore.

VI. THE HOSPITAL TREATMENT OF TUBERCULOSIS.

This is an anxious question, and one that is difficult of solution.

Theoretically, the air of a hospital ward, however clean and well ventilated that ward may be, is unsuited to a consumptive. In it his surroundings are calculated to depress. The dietary may not coax his appetite. And then to look at the question from the point of view of the other patients, the presence of the consumptive may be no more than tolerated. He keeps them awake at night with his racking cough; he resents open windows, yet may pollute the air in the ward to an extreme degree. If his expectoration is not destroyed or disinfected, he may even infect his fellow-sufferers with his own disease. He occupies month after month a bed which otherwise would accommodate many generations of patients laboring under less chronic and more curable maladies. Lastly, the hospital treatment of tuberculosis breaks down because of its utter inadequacy to cope with so universal and so tedious a disease. In a week every bed in every hospital in the United Kingdom might be filled with consumptives, and even then thousands upon thousands of cases would be left without hospital accommodation, so widespread is the plague of phthisis.

The hospital treatment of tuberculosis should resolve itself into providing of—

1. Consumption hospitals, or sanatoria, in which the disease could be treated in its earlier and more hopeful stages.
2. Special consumption wards in general hospitals, into which tuberculosis, and that disease alone, should be received.
3. Refuges for those far advanced in, or dying of, consumption. The German name for such an institution is very expressive—"Friedensheim," or "Home of Peace."

VII. CLIMATIC TREATMENT OF CONSUMPTION.

This topic naturally falls under the headings:

1. Sea voyages.
2. Maritime health resorts.
3. Mountain sanatoria.
4. Dry, sunny climates.
5. Moist, warm climates.

The climatic treatment of consumption is necessarily expensive, and therefore it is only the few who are in a position to fully avail themselves of it.

It is equally obvious that in the earlier stages of the disease alone can climate be expected to promote or to effect a cure. Life may, no doubt, be prolonged in many cases even in the later stages. At the same time, it seems little short of cruelty to send a doomed consumptive away from home comforts to die at sea, or to lay his bones on a foreign strand. Much circumspection, therefore, is needed on the part of the physician who is called upon to decide whether a patient is to go abroad or to stay at home. And, again, a fit choice has to be made in each case of a long sea voyage, the seaside littoral, a mountain health resort, or a lowland and inland climate.

VIII. DIETETICS AND THERAPEUTICS.

These topics may well be considered together. Nor need we enter into details as to the feeding of a patient in declared consumption, for his dietary should be that already above described under the heading of "Prevention of Tuberculosis." Milk, eggs, butchers' meat, and fish should form the staple food of the phthisical. I have long taught successive generations of medical students that in consumption a high bodily temperature does not debar a meat dietary; on the contrary, the constitutional state of the patient will probably improve on such a diet if he has appetite for it. Should the appetite flag, nourishing light meals should be given at shorter intervals than in health, the invalid sometimes being fed as a fever patient.

Milk is universally regarded as the best food in consumption, and deservedly so. Cod-liver oil should be looked on as a valuable food rather than as a medicine in this disease.

Chloride of calcium, the old muriate of lime, is a drug of extreme value in the preventive not less than in the curative treatment of phthisis.

Sore throat, cough, sweating, dyspepsia, fetid diarrhea, and vomiting—all demand special treatment. Fluid extract of condurango in thirty-drop doses in water relieves the distressing dyspepsia of phthisis. Vomiting is often relieved by swallowing a cocaine tabloid. Salol and carbonate of guaiacol are amongst the antiseptic remedies which do good in diarrhea. Of serum therapy in tuberculosis I have no practical knowledge; but it will doubtless be a principal method of treatment in the near future.

IX. NOTIFICATION.

Is it desirable that tuberculosis should be added to the schedule in the Infectious Disease Notification Act, 1889? Compulsory notification of tuberculosis, as has been well shown by Dr. Russell,* "would cover an enlarged cervical gland, a lupus, a white swelling, a hydrocephalus, a 'cold abscess,' every form of local tubercle, as well as a case of phthisis." Then the chronicity of tuberculosis must be remembered. Individual cases would come to be notified over and over again in the lapse of months or years. And supposing notification to have taken place, of what use would it be as regards disinfection, while the invalid was still occupying his room or dwelling?

At the same time voluntary notification should be encouraged, and notification of a *death* from tuberculosis should be made compulsory, so that the local sanitary authority should take steps to disinfect the dwelling-place and effects of the deceased.

THE BRONCHITIS-TENT, THE HOT PACK, AND THE HOT FOOT-BATH.†

By H. A. Hare, M.D.,
Professor of Therapeutics in the Jefferson Medical College of Philadelphia.

Gentlemen: I propose to devote the hour to-day to the consideration and demonstration of the employment of several remedial measures other than medicines; and I would ask your careful attention, because one of the most important things which you can learn as medical students is the necessity of giving as little medicine as possible for the production of the cure you are seeking to bring about. I have often told you that medicine should be used by physicians as ammunition is used by soldiers, namely, only when necessity requires, and then with a very definite idea of exactly what is to be accomplished.

The first remedial agent to which I wish to call your attention is the so-called bronchitis-tent, an apparatus which can be readily improvised in any household, and which will give your patient great comfort in many conditions in which the respiratory passages are dry or in an irritated condition. It will prove useful in the treatment of ordinary spasmodic croup dependent upon a catarrhal condition of the child's larynx, which may be exacerbated by the fact that the child sleeps in a room heated by means of a furnace, the hot air of which is not only abnormally dry but often laden with dust. It will prove of value in the treatment of persons who have been exposed to irritating fumes or gases, and who, as the result, are suffering from inflammation of the respiratory passages. In the early stages of bronchitis in children and adults it will do much towards modifying the severity of the cough and the inflammation in the bronchial tubes, and in catarrhal and croupous pneumonia and whooping-cough it will in many instances prove an invaluable aid to the other measures which you will naturally institute.

The bronchitis-tent can be hurriedly improvised by tying to each corner of the child's cot an ordinary broomstick, the broom end resting upon the floor, and drawing over this frame one large sheet, or two small ones basted together, in such a way that the canopy falls over the broomsticks and down at the sides of the bed almost to the floor. In this way the child lies in a little tent, the top of which is elevated two or three feet above its head, thereby giving it plenty of air-space. At the foot of the bed you now place an ordinary Arnold steam sterilizer, an apparatus with which many of you are familiar and which I now show you. This can be used, as you well know, not only for the sterilization of milk for infant-feeding, but also for the sterilization of your instruments; and by having a small hole made in the lid to which is soldered a pipe running off at an

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* *Loc. cit.*, page 29.

† Clinical lecture delivered at the Hospital of the Jefferson Medical College.

angle of 45 degrees, you are provided with an apparatus by which you can also develop and distribute steam in any place and in any direction you desire. A very small alcohol-lamp serves to disengage a large amount of steam from this apparatus, because only a small amount of water has to be heated at a time, the large pan which is superimposed upon the copper bottom containing the boiling water acting as a reservoir which continually provides a fresh supply of water, so fresh water need only be poured into the apparatus at intervals of several hours. The end of the pipe attached to this sterilizer is now made to project under the sheet forming the tent, and in a very short time the child is surrounded by an atmosphere which on the one hand is not so heavily laden with steam as to alarm it, and yet on the other hand is so warm and moist and balmy as to very quickly soothe its irritated mucous membranes. The child can sometimes be kept in this tent for a number of days with great advantage, and if well enough can be allowed to have its toys, and even its little friends may visit it. By the use of a little ingenuity in the way of substituting flags for sheets, you can very frequently not only succeed in making your patient happy in his confinement in the tent, but the envy of all the other children in the family.

This same steam-producing apparatus can be employed for the breaking up of forming diseases, particularly those due to cold, as it practically provides a home-made Russian bath. The patient, sitting upon an ordinary wooden chair, is stripped, and then covered with a heavy blanket, which is tightly pinned about his throat. The sterilizer and alcohol-lamp are then placed at a little distance to one side, and the tip of the tube from the sterilizer is so arranged that it discharges its steam underneath the blanket surrounding the patient. In a very short time the patient will break out into a profuse perspiration, which will often be sufficient to relieve him of his forming cold by overcoming internal congestion. This relief may be emphasized if at the time the séance is begun a little sweet spirit of nitre be given in a hot lemonade.

This method is also useful for the purpose of stimulating the glands of the skin and relieving the kidneys in cases of chronic renal diseases in which it is feared that uremic symptoms may develop or in which mild uremic symptoms have already commenced. Care should be taken in all cases, however, that the patient breaks out into a sweat, for if he does not do so he will be very apt to suffer from heat-stroke or be much oppressed by the heat. If the heart has undergone marked degenerative changes as the result of the renal disease, increased caution should be exercised, lest the exposure to the hot bath produce cardiac failure. If for any reason the patient is unable to sit upon a chair, he may lie in bed, and by means of a few barrel-hoops cut in two the covers may be slightly elevated above his bed, sufficiently to permit the entrance of the steam, but not high enough to cause him to become chilled by the entrance of the air of the room. In this way the patient gets almost as satisfactory a sweat as in a chair. Similar measures may also be resorted to for overcoming the fall of bodily temperature which is associated with the collapse occurring at the crisis of acute infectious diseases or following surgical operations or injuries.

You see, therefore, that by means of comparatively simple measures and one single piece of apparatus which can be used for other useful purposes, you have provided for your patients a number of efficient therapeutic measures.

The hot pack is used for practically the same purposes as is the hot steam bath that I have just named, namely, for increasing the action of the skin and producing a sweat. But it is also of value in another condition, in which the results of its use are often extraordinary. I refer to the control, and even the cure, of chorea minor. As you are well aware, we commonly rely upon arsenic as a remedy above all others in this condition, but in those cases of severe chorea which persist during the night as well as the day the child is rapidly exhausted, not only by the movements but by the loss of sleep, and under these circumstances a fatal result is not rare. It is in these cases that the hot pack affords us the best results, for even while the child is still in the pack it will frequently fall into a restful and refreshing sleep which marks the turning-point in its disease. Perhaps the hot pack not only does good by quieting reflex irritation but also by aiding in the elimination of poisonous materials from the body, if, as is thought by some clinicians, chorea is dependent upon an infection. The method of using it is as follows: First, a moderately heavy blanket is dropped into a tub of very hot water. While it is becoming thoroughly soaked, a rubber sheet is placed

upon the bed and covered by a dry blanket. The child is now stripped and laid upon this blanket, and the blanket which has been soaking in the tub is then wrung out as dry as possible and wrapped around the child up to its neck, its arms being folded across its chest. This must be done with caution, for two reasons: on the one hand, the application of too hot a blanket will scald the child, while on the other hand if the water has not been hot enough or the blanket is much exposed to the air while being wrung out it will become cooled to such an extent as to lose all its efficiency. Care should be taken that the child's temperature does not rise above 100° while in this hot pack, and such a rise may be prevented in part by allowing it to sip a little cold water from time to time, an act which will also reflexly increase the excretion from the skin by the presence of cold in the stomach. After the pack has been used for twenty minutes to an hour, or as long as the blanket remains hot, the child is quickly taken out of it, rubbed dry, laid in dry blankets, and allowed to go to sleep.

The hot foot-bath is familiar to you all, particularly when to the water has been added some mustard to increase its counter-irritant effect. You have probably seen it employed very many times for the purpose of breaking up severe colds, the foot-bath being given the last thing before the patient actually gets into bed for the night, and in association with hot and stimulant drinks. I want to call your attention to one other use of this hot foot-bath, namely, its employment by nervous and overworked persons who on going to bed suffer from insomnia and cold feet, the insomnia being due to the cerebral hyperemia following excessive use of the brain. In these cases it is far better to allow of sleep by the use of the hot foot-bath and mental rest than it is to run the danger of producing the morphine or chloral habit in your patient by prescribing either one of these drugs as a hypnotic.

CLASP-KNIFE FINGER.

BUDINGER (*Wiener Klin. Woch.*, May 21, 1896) describes a case of clasp-knife (trigger) finger ("*schnellende finger*"), the pathology of which is much disputed. The patient was a woman aged sixty-eight, who fell in the street upon the abducted thumb of her outstretched right hand. Soon after she had much pain in the neighborhood of the metacarpo-phalangeal joint, without swelling. There was marked crepitation on movement of the finger. In a few months the pain gave place to an impairment of the flexion and extension of the joint; eight weeks before admission the patient noticed that active extension of the flexed thumb had become impossible, but that when she pulled the last joint back forcibly with the other hand the obstruction to extension gave way with a sudden snap. Examination showed slight rheumatoid changes in the joints; flexion of the thumb was almost perfect, but caused the appearance at the base of the first phalanx of a hard, painless tumor, above which the skin was freely movable, and which could be felt to disappear with the sudden extension of the joint. An incision was made over the swelling from the volar aspect, and the cause of the affection found to be that the tendon sheath folded up like a concertina during flexion, and caught the tendon so tight that it could only be released by a smart tug; the folding of the sheath was also the cause of the temporary swelling. The sheath was divided and tucked over, and the mobility of the joint perfectly restored.

The two most important points in this case were: the limitation of the "clasp-knife" action to extension, flexion being unimpaired, and the concomitant disappearance of the tumor. The author gives a bibliography of the affection, from which it appears that its cause is by no means uniform, being as often attributable to abnormalities in the tendon as in the sheath; in several cases operation has neither revealed the origin or relieved the symptoms of the condition. Treatment without operation is, however, as a rule prolonged, painful, and ineffectual, and the author concludes that in all cases the open method of treatment should be adopted.—*British Medical Journal*, July 18, 1896.

CURE OF OBSTINATE DIARRHEA BY COLOSTOMY.

STEPHAN (*Berliner Klin. Woch.*, No. 21, 1896) reports the case of a man, aged twenty-six, who had suffered eight weeks from bloody stools and violent tenesmus. Customary treatment was fruitless. Left inguinal colostomy was performed, the opening being made in the sigmoid flexure. For two days the gut was washed out with milk of bismuth and nitrate of silver. The patient gradually recovered. Four months later an effort was made to close the fistula, but the small opening remaining finally closed spontaneously.

The Therapeutic Gazette

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Leading Articles.

THE SEMI-CENTENNIAL OF ANESTHESIA.

At this time, when the various anesthetics are employed daily in many hundreds of cases the world over for the alleviation of the pain and suffering otherwise necessarily attendant upon severe surgical operations, it seems hardly credible that but fifty years ago all this suffering had to be borne by those unfortunates whose condition required interference with the knife, with a heroism of which very few of us in these days have any conception. Yet the 16th of October, 1896, was the fiftieth anniversary of the first use of sulphuric ether or any other competent anesthetic for the production of what Oliver Wendell Holmes has called anesthesia. It seems hardly necessary to remind our readers that on this date ether was first given, to a patient suffering from a tumor of the neck, by Dr. Morton, a dentist of Boston, and that the patient was operated upon successfully and without pain by the elder Dr. J. Collins Warren, at that time surgeon to the Massachusetts General Hospital. As an illustration of the difficulties which surround the introduction of any new method, it is interesting to recall the fact that on this important occasion Morton was unavoidably detained and did not arrive at the amphitheatre until the lapse of a considerable time after the hour appointed by Dr. Warren. So great was the delay that Dr. Warren and the physicians who had assembled to watch the new experiment concluded that Morton's courage had failed him at the last moment, and at the time of his entrance into the room they were expressing themselves rather freely as to his conduct. On his appearance, Dr. Warren somewhat sarcastically said to him, "Sir, your patient is ready;" and the young dentist, proceeding with the anesthetic, had the pleasure of replying to the eminent surgeon a few minutes later, "Sir, *your* patient is ready." After the operation had been completed, Dr. Warren, turning to his friends, said, "Gentlemen, this is no humbug."

It is not our intention at this time, nor would it be appropriate here, to go over the evidence which has been produced again and again by different authors and writers upon the subject of anesthesia, as to who was the first person to employ ether, or even nitrous oxide gas, for the relief of pain during surgical operations. It seems to be practically proved that Dr. Long, of Georgia, was the first person who ever administered this substance successfully and performed operations painlessly while his patient was under its influence; but, on the other hand, it is equally certain that Dr. Long either failed to report the success of his discovery because he did not recognize its importance, or else willfully withheld the information which during the course of the next few years would have relieved many hundreds of persons of an immense amount of suffering. It is an invariable rule, in determining claims as to priority of discovery, whether in medicine or any other science, to award this distinction to the person who can prove that his researches began at a certain time and that he published results of those researches before any one else had followed them sufficiently to present them to the world. For this reason the claims which were put forward by Jackson, by Horace Wells, by Marcy, and others, that they deserved the credit for the introduction of etherization, must be put aside along with those of other claimants who believed they actually employed the anesthetic for this purpose with success as early as did Morton, for it is to the bravery and persistent attempts of the latter investi-

gator that we owe our first real knowledge of the influence of this drug. Not only did he administer it to himself in his earlier experiments, and thereby give evidence of extraordinary personal bravery, considering that no one at that time knew what the effects were, or was accustomed to remedies which destroyed consciousness, but he also gave it to two of his assistants, Spear and Leavitt, and had the courage, in the face of an enormous amount of opposition from dentists, medical men, and even from the clergy, to insist upon its value in the relief of pain. It would seem that the greater credit is due him since, by reason of his origin and early education, he lacked the training which would naturally have guided him in original research and inspired the unselfish bravery of which he gave so great an evidence. There is probably no experiment recorded as having been made by an individual upon himself, which is more interesting than Morton's personal inhalation of ether. He was clever enough, before attempting his inhalation, to look at his watch in order that he might have some record of the time during which he was unconscious, and as he passed into unconsciousness he nevertheless suffered from fears lest he should never return to life. As, however, the effects of the drug wore off, he found that his intellect returned before his power of sensation, and when he pinched his own arm or thigh he could indistinctly recognize the fact that he was attempting to give himself pain. A moment after this he looked at his watch and found that he had been insensible between seven and eight minutes. The success of this experiment naturally filled him with extraordinary emotions, and that very evening, during the time that his anxiety to try the drug on some one else was at its height, a patient arrived at his door who stated that he had a dreadful toothache but could not summon enough courage to have the tooth pulled, and asked that if possible he might be mesmerized in order that the agony of the operation might be lessened. Morton, having gained his consent, at once proceeded to administer ether to him, and extracted his tooth painlessly; but then the cadaveric appearance of the patient gave a sudden shock to the elation of the daring young dentist, whose unscientific attempts at resuscitation failed, and it was only by dashing a glass of cold water in the face of the patient that he was restored to consciousness.

It seems appropriate that Morton should have a place among the fifty-three most distinguished citizens of Massachusetts whose names are inscribed upon the base of the dome of the new House of Representatives in the Massachusetts State House, and that the words of Dr. Jacob Bigelow, the eminent surgeon of Boston, should be inscribed upon the tombstone which covers his remains. These words are: "William T. G. Morton, inventor and revealer of anesthetic inhalation, by whom pain in surgery was averted and annulled, before whom in all time surgery was agony, since whom Science has control of pain."

There are other reasons than those which we have given why Morton should be accorded the full credit for his discovery. Wells, after seeing the application of the new anesthetic, was not favorably impressed, said that it was dangerous and risky, and refused to have anything to do with it. Jackson never could prove more than that he made certain suggestions to Morton which led him to the result with which we are so familiar. And Long is excluded for reasons already given.

It is interesting to note in conclusion that the discovery of the value of ether as an anesthetic was properly celebrated by a jubilee in the Massachusetts General Hospital on October 16, 1896, at which a large number of interesting addresses were delivered, and in which full credit to Morton was gladly given. Not only this, but in Paris on the same date a similar celebration was held, and we understand that in London some notice was taken in a public manner of the value of this American discovery.

It is of interest, too, to note the fact that the use of nitrous oxide for the relief of pain originated in America, and that, while Sir James Simpson undoubtedly introduced chloroform into medicine as an anesthetic and in this way secured to Great Britain a large amount of credit for an important discovery, chloroform itself was first prepared by Guthrie, of Sackett's Harbor, New York.

It is also of interest to note that not only in America, but also in France and in England, the profession as a body is gradually coming to a conclusion to which many prominent members of it came several years ago—that ether is, after all, by long odds the safer anesthetic, and that, while chloroform is of great value, it is only to be used in those cases in which there is a contra-indication to ether of sufficient importance to make its administration inadvisable. That this is the

opinion in England, which for many years has been the stronghold of chloroform, is evidenced by the fact that in the very valuable contributions to the subject of anesthesia appearing in the London *Practitioner* for October, 1896, the whole trend of opinion is in favor of the safety of ether as compared with chloroform.

THE USE OF MINUTE DOSES OF PILOCARPINE FOR EXCESSIVE SWEATING.

Skilled physicians are fully aware that the effects of drugs can be varied very materially by the size of the dose, and that in some instances results diametrically opposed to the general physiological action of a drug when given in large doses may be obtained by employing comparatively minute quantities. Illustrative of this is the use of small doses of ipecac for the purpose of controlling vomiting which is induced by a condition of atony of the stomach. The irritant ipecac in small doses acts as a stimulant to the gastric mucous membrane, whereas if it were given in large doses its emetic effects would be manifested.

We are all of us familiar with the employment of pilocarpine in the dose of one-eighth to one-fourth of a grain for the purpose of producing profuse sweating—an action due to the influence of the drug upon the peripheral ends of the nerves in the sweat-glands and upon the sweat-glands themselves, rather than to any centric nervous influence. In all probability a certain number of cases of excessive sweating—such, for example, as the night sweats of phthisis—depend upon a condition of lowered vitality or atony of the sweat-glands and cutaneous blood-vessels, and for this reason it is possible that the administration of pilocarpine, by stimulating these parts, may bring them up to their normal degree of tonicity, with the result that the sweating will stop. Of course it is possible that in tuberculosis and other forms of sepsis accompanied by sweating, the excessive glandular activity is an effort upon the part of the system to get rid of certain impurities, or that the poisons which are developed in the body so influence the sweat-glands or their supplying nerves that excessive sweating ensues. Be this as it may, we have found that in a certain number of cases of tuberculosis the use of minute doses of pilocarpine, such as one-sixtieth to one-thirtieth of a grain, seems to control the sweat, at the same time not increasing salivary flow or depressing the patient as the drug so frequently does when full doses of it are administered. This depression after large doses is one of the chief reasons for the limitation of the popularity of jaborandi or its alkaloid.

As night sweats are a symptom which frequently resist many plans of treatment, it is well in desperate cases to think of this remedy. We have, in an earlier number of the THERAPEUTIC GAZETTE, asserted our belief that camphoric acid in the dose of twenty grains is the most efficient anti-sudorific in use, and we still have the same belief, only recommending pilocarpine in the minute doses named as a remedy to be thought of when camphoric acid and other well tried remedies have failed.

THE ABUSE OF NERVOUS STIMULANTS.

The medical profession and the laity have been accustomed for so many years to the abuse of alcohol as a nervous stimulant, that some persons have become hardened to the miseries which it induces, while others have been stimulated to its excessive condemnation. As a result of this and of the general desire for stimulating foods or drugs, a very large number of persons have been led to place before the public other powerful nervous stimulants, of which both the medical profession and the laity know less than they know of alcohol, until, at the present time, there are almost as many consumers of nervous stimulants other than alcohol as there are of those who use alcohol to excess. Further than this, the number of these substitutes is daily increasing, and in many instances unprincipled venders are fortifying comparatively innocent and mild nervous stimulants, dispensed for common use, with so large a quantity of alcohol added that the patient really becomes addicted to the alcohol habit while thinking he is simply using an innocuous drug; he thinks he is taking coca, kola, or some similar stimulant, when in reality most of the temporary changes for the better which he notices after a dose of his favorite tipple are due to the alcohol which it contains.

It has been thought by some that the rush and dash of modern life forces a large number of persons without well balanced nervous systems to the use of stimulants to a greater extent than they were employed by our ancestors, but a careful study of this question

would seem to indicate that this is untrue, and that for many hundred years the human race, in some of its parts at least, has been accustomed to use and abuse nervous stimulants, for the same purpose as we use and abuse them to-day.

Unfortunately, many physicians, in their endeavor to relieve symptoms temporarily, and ignoring the underlying causes of the affections from which their patients suffer, are too ready to employ many of the preparations we have named, not only giving them to their patients, but using them themselves. The object of this note is not, however, to direct attention to these preparations or to the evil effects which they produce, but rather to make clear the fact that all of them are but temporary makeshifts which in the end, in the vast majority of cases, materially increase the discomfort and the ill-health of the person who takes them.

The abuse of these remedies by the profession is not so much the result of ignorance as of carelessness. There is no drug yet discovered, so far as we know, unless it be alcohol, which distinctly adds force to the body when it is taken. All of the so-called "strengthening remedies," which enable a man to accomplish more work when he is under their influence, do this not by adding units of force to his body, but by utilizing those units of force which he has already obtained and stored away as reserve force by the digestion of his food. Kola, coca, excessive quantities of coffee and tea, and similar substances, while they temporarily cause nervous work to seem lighter, only do so by adding to the units of force which a man ought to spend in his daily life those units which he should most sacredly preserve as his reserve fund. The condition of the individual who uses these remedies when tired and exhausted, with the object of accomplishing more work than his fatigued system could otherwise endure, is similar to that of a banker who under the pressure of financial difficulties draws upon his capital and reserve funds to supplement the use of those moneys which he can properly employ in carrying on his business. The result in both instances is the same. In a greater or less time the banker or the patient, as the case may be, finds that his reserve fund has disappeared and that he is a pecuniary or nervous bankrupt.

Even the advertising boards and the fences of the cities, towns and country now contain advertisements which mislead the ignorant into the idea that by using the drugs named thereon they will actually increase the development of their muscular power, when in reality the final result of such a course must be to decrease the nervous stamina which the would-be athlete so earnestly desires.

THE DISINFECTION OF THE BLOOD IN GRAVE INFECTIOUS DISEASES.

Barre contributes to the *Revue de Thérapeutique Médico-Chirurgical*, June 1, 1896, an article upon this subject. He points out that in all infectious diseases there is great intoxication of the blood. The apparatus which he employs for "disintoxication" consists of a rubber tube which is attached to a hollow needle about the size of a large hypodermic needle. This needle is inserted into one of the veins of the arm, and artificial serum or salt solution is then gradually introduced into the venous system. At the same time blood may be withdrawn from another vein by means of a needle inserted and attached to a second tube. The quantity of serum which he injects varies from a pint to a quart, according to the degree of the intoxication. Under these circumstances a marked increase in renal activity is usually developed, particularly if simultaneous bleeding is resorted to, and a large amount of poison is thereby washed out of the blood.

Barre finds that by this method he has been able to bring about the natural crisis of the disease and in every way to improve the patient's general condition.

We do not believe the method of Barre should be resorted to except in grave cases, and we also believe that under no circumstances should blood be extracted directly from the body, but rather that intra-venous injections or hypodermoclysis alone should be resorted to when it is believed that the kidneys are inactive. It is, of course, wise to attempt to clear the blood of impurities under circumstances such as Barre mentions. We believe much more in the method recommended by Duret, of massive subcutaneous injections of salt solutions in septicemia following operations or occurring during the puerperium. Thus, Duret has employed these injections in ten cases with success—four cases of acute post-operative septicemia, four cases of puerperal septicemia, one traumatic shock after disarticulation of the leg, and one case of collapse due to hemorrhage. The action in all cases was prompt, and the patients were markedly benefited by the treatment.

SURGICAL FOREIGN BODIES IN THE PERITONEAL CAVITY.

This subject, always of interest, is again revived by an interesting communication from MacLaren in the *Annals of Surgery.* He reports two cases under his own observation. In one a gauze sponge was left in the peritoneal cavity, and expelled from the rectum ten days later; the patient recovered. In the second case, hysterectomy was performed, but was followed by persistent pelvic pain and irritation, with the formation of a pelvic tumor in the right loin at the end of two years. Operation showed that this tumor was composed of a pair of artery-forceps imbedded in ulcerated intestine and enclosed in a wrapping of omentum. The instrument was removed, the intestine was sutured, and the patient recovered.

Twelve years ago, ten cases in which portions of sponge had been left in the belly were reported before the American Gynecological Association as resulting fatally. Coe's statement is quoted to the effect that he removed post-mortem four sponges from the peritoneum which had been left by eminent operators. Wilson, in a case of his own, left a sponge in the abdominal cavity for five months, when it made its way to the surface and was removed.

The risk attendant upon leaving a foreign body in the abdominal cavity seems to be much less now than was the case when the principles of asepsis were not so thoroughly understood, and it is quite possible that even a comparatively large body, if clean, can remain indefinitely without occasioning symptoms. These bodies, however, show a tendency to ulcerate into the intestine and thus escape

Morris records a case as illustrating the reactive power of certain individuals. A pair of hemostatic forceps, left in the abdominal cavity, ulcerated into the bladder, and were safely removed from this viscus.

The surgical foreign bodies left in the peritoneal cavity are nearly always sponges or artery-forceps. This emphasizes the importance of a careful counting of these articles before and after every operation.

MacLaren states that in seven comparatively recent cases of intra-peritoneal surgical foreign body, there was but one death. It could be wished, for the good of the profession, that every laparotomist would be willing to record his personal experience.

The lessons taught by a study of this subject are: that it is possible for the most careful to close the abdomen with a foreign body remaining in it; that the sooner this is removed by operation, the better the prognosis; that when a foreign body is sterilized by modern methods the danger of immediate septic peritonitis is far less than it used to be during the ante-antiseptic period.

IMMEDIATE SUTURE OF THE BLADDER AFTER SUPRA-PUBIC CYSTOTOMY.

It seems singular that after the performance of a supra-pubic cystotomy upon a comparatively healthy bladder, as for instance in the removal of stone in young and middle-aged men, the profession should as a rule still favor supra-pubic drainage of the bladder. This practice, necessary before clean surgery was understood, is in the majority of cases as unwise and unnecessary as it would be, for instance, after an incision into the bowels for the removal of a foreign body, to drain the intestinal wound through the external incision in place of closing it.

In Paris the great authority of Guyon, who has for years successfully used a supra pubic drainage tube of his own construction, has been sufficient to prevent immediate suture being practiced as a rule. Elsewhere, however, this method of treatment is somewhat more popular; thus it has been warmly advocated by Bassini, Halbert, Brunner, Ulzmann, and a number of leading genito-urinary surgeons.

Suture possesses the advantages of keeping the pre-vesical space clean and of avoiding the risk of permanent fistula. Moreover, if it is successful the patient becomes able-bodied much sooner than when supra-pubic drainage has been employed. For the successful practice of suture, efficient continuous drainage of the bladder is essential; this usually can be accomplished by a self-retaining catheter of full size.

The bladder suture should approximate raw surfaces, and should include the whole thickness of the bladder with the exception of the epithelial lining of the mucous coat. The stitches should be placed six to the inch, and when tied down should so perfectly appose the wound surfaces as to render the wound impervious to any portion of an injection of six or eight ounces of an antiseptic solution made through the urethra.

In cases that have been infected, it is well to drain the pre-vesical space by gauze, and insert sutures for the closure of the external

wound, which are not tied down until, three days later, it is found that the line of vesical union holds.

The most careful attention must be devoted to the condition of the permanent catheter. It should drain continuously, should be changed once in forty-eight hours at most, and the bladder should be washed twice daily with Thiersch's solution or other unirritating antiseptic, not more than an ounce being injected at any one time.

The permanent catheter may be removed in five days, after which the patient may be allowed to empty the bladder by muscular effort, provided this function is accomplished easily; otherwise the intermittent catheter is employed. Even when there is little reason to hope for primary union of the bladder-walls—*e.g.*, in cases of long-standing inflammation when they are thickened and friable—the primary complete suture is desirable, since it will hold at least for two or three days and thus protect the pre-vesical tissues from constant contact with irritating and infecting urine.

Reports on Therapeutic Progress

EXPERIENCE WITH PILOCARPINE IN THE TREATMENT OF THE UREMIA OF BRIGHT S DISEASE.

PROBEN thus concludes quite a lengthy article on this topic in the *New York Medical Journal* of July 18, 1896:

The rapidly uniform and fatal action following the use of pilocarpine in the above-cited cases, where apparently no contra-indication for its administration existed, has incited the writer to raise his voice in protest against the use of this drug in the treatment of uremia, for it has proved itself, not alone in his hands but in those of others, an untrustworthy and dangerous drug. Not in the least does he wish to disparage its use in some ailments where it has proved itself extremely useful and a valuable addition to our materia medica; but in the conditions enumerated above, where it jeopardizes the life of the patient, he emphatically protests against its further use. He doubts not that similar experiences could be recorded by others, were it not for the reluctance of offering our failures for just criticism. The loose statements of our text-books that this remedy may be employed with safety impress the reader that the drug may be resorted to with impunity. In Bright's disease, especially that form in which the circulatory appendages are involved, occurring generally in the senile state, we must reason that cardiac degeneration incapable of detection takes place, and if, for any reason, the use of pilocarpine may seem indicated, the drug should certainly not be prescribed. When he was interne at Charity Hospital, the general routine treatment for uremia was hot-air baths and pilocarpine injections, and he recollects cardiac failure and pulmonary edema were frequent causes of death, coming on shortly after its administration. Why it is that pilocarpine can be given with impunity in some diseases and should prove so dangerous in others, as in nephritis, he is not prepared to say, save that the general invasion of the vascular system by pathological processes produces cardiac changes which impair its energy, making it unable to cope with the depressing effects of the poison given. It has been established, and cannot be controverted, that pilocarpine is a marked cardiac depressant and a dangerous remedy to administer in uremia, that its sphere of usefulness is but a limited one, and that it should be banished from our therapeusis of Bright's disease.

SALINE INJECTIONS IN SEPTIC CONDITIONS AND SHOCK.

Duret records eight cases of septicemia, four after operation, four puerperal, one of severe shock, two of collapse from hemorrhage, and one of urinary infection, treated by large and repeated subcutaneous injections of saline solution; twelve cases in all, of which ten recovered. He believes hypodermic as effectual as intra-venous injections, and used a 0.73-per-cent. solution and a simple apparatus consisting of a bottle, closed by a stopper of caoutchouc pierced by two bent glass tubes—one short and connected with the needle by an india-rubber tube; the other reaching to the bottom of the bottle to admit air, and closed externally by aseptic wool. If the bottle be raised about a meter above the needle, and inverted, ten or twelve minutes suffices for the gradual injection of 500 to 600 grammes. This quantity causes a wheal of a square decimeter. The fold of the armpit, the retro-scapular region, the flanks, buttocks, or outside of the thighs may be chosen.

Sahli, who has also used hypodermic injections, and recommends them especially for the typhoid state and uremic condition, used a liter flask with a thermometer, a 0.7-per-

cent. solution at 45° in the flask, cooled down by passing through a large Leiter tube on the abdomen underneath the bedclothes.

Maygrier, apropos of a case of placenta prævia successfully treated by three intra-venous injections amounting to six liters in one evening, says the reservoir of the solution is placed half a meter to a meter above the vein, and all air is carefully expelled from the tube and needle before the latter is introduced. Should the reservoir be lowered by mistake, blood may enter the cannula, clot there, and a clot be injected when the reservoir is raised. If any blood enter the cannula, the instrument must be withdrawn and emptied, and the operation recommenced. The entrance of a small quantity of air does not matter.

Lejars exhibited a young man whose ruptured intestines he had sutured after peritonitis was fully established, and who recovered after receiving twenty-six liters of saline solution in intra-venous injections; and gave details of three other remarkable cases of surgical infection cured in a similar way. He said that, always provided the kidneys are sound, such injections have, even in desperate cases, unhoped-for success, and should be generally adopted. Grave and threatening infection may be arrested or attenuated by one large injection, but it will generally be necessary to continue the lavage for some days, to use many liters of artificial serum, and to supplement the intra-venous injections by hypodermic injections of moderate quantity every two hours.

Chasserany reported that he had found from experiment voluminous injections (intra-venous, intra-peritoneal, or subcutaneous) prevent the intoxication of rabbits by strychnine, provided they are made before the onset of the nervous symptoms. Delbet was not able to detect the alkaloid in the urine or saliva of dogs poisoned by strychnine, and in one case only of eight was the effect of the poison modified by the injections. A dog of 4.3 kilos received three milligrammes of sulphate of strychnine; then, in eighty-five minutes, 910 milligrammes of the saline solution; all symptoms ceased and the animal recovered. In 105 minutes from the beginning of the injection the enormous quantity of 532 grammes of urine had been passed. The animal was killed some days later by the same dose of the poison in twenty-one minutes. Further experiments had proved that the injection of even large quantities of the saline solution did not cause trouble when the arterial pressure was normal, or even when it was artificially raised by atropine; this method may therefore be employed in certain pathological elevations of pressure—for example, eclampsia. Pressure lowered by copious hemorrhage is rapidly restored by the injection of even a less bulk than the blood lost, but not so rapidly by the hypodermic as by the intra-venous method.

Tuffier has practiced intra-venous injections, both for hemorrhage and for toxemia, in fifty cases, including two cases of tetanus (after preliminary bleeding), and found the first effect was to restore the normal arterial pressure and diminish the frequency of the heart's action; the second, to cause diuresis.

Proben, in a case of eclampsia, injected two quarts of the normal saline solution; the urine had been almost totally suppressed, with 100 per cent. of albumin, but within twenty-four hours the woman passed 109 ounces.—*British Medical Journal*, July 4, 1896.

ON THE USE OF SALICYLATE OF SODIUM AND BROMIDE OF POTASSIUM IN THE IRRITABLE TEMPER OF CARDIAC DISEASE AND GOUT.

LAUDER BRUNTON writes of this topic in the London *Practitioner* for July, 1896. He remarks that an irritable temper is a great misfortune, not only to its possessor, but to his friends and acquaintances. It may be natural or acquired, permanent or temporary. In many people an irritable temper is hereditary, but it may be brought very much under control by constant effort; while in others, a temper which was not originally bad may become excessively irritable from lack of control, and the habit of yielding to it on slight provocation. But the temper may become irritable from various physical conditions, such as continued ill-health; or it may become temporarily irritable, as in gouty people shortly before an attack of gout. Not infrequently the explosions of temper which occur on very slight provocation are really due to the irritation produced by an accumulation of small irritations, bodily or mental, which have been gradually working up the patient into a state of excitement, and this feeling vents itself in an explosion quite out of proportion to the irritation which has simply let it loose but has not really produced it. Thus, an unfortunate clerk or office-boy may be roundly abused for some very slight slip on his part, while the wrath poured out by his

principal is really due to business worries or personal annoyances altogether unconnected with the subordinate's fault.

Continuous physical discomfort likewise tends to cause an accumulation of irritability, which finally finds vent in an explosion of temper, and an angry person sometimes blames himself for a moral wrong when he is really suffering from physical disorder.

The late Dr. Milner Fothergill used to tell a story of a very irritable old lady who frequently retired to her own room to pray for grace to control her temper, when what she really needed, in Dr. Fothergill's opinion, was a dose of potash to relieve her gout.

In some gouty people twenty grains of bicarbonate of potash, with ten or twenty of bromide of potassium, taken when the feeling of irritability comes on, frequently soothes it, and it has the further effect of lessening the worry even in those who are not irritable. If this "temper powder," as Brunton calls it, be taken when some irritating occurrence takes place, or some depressing news is heard, it appears to take away the sting of either, so that, in place of being much worried thereby, the person feels as if he had slept over the bad news or the worry, and is able to obtain relief by turning his attention to something else.

Irritability of temper does not occur in all cases of cardiac disease, but it is by no means an infrequent symptom. The late Mr. Mark Morrow, Steward of St. Bartholomew's Hospital, one of the acutest observers that Brunton ever came across, told him that when a patient came down to the office at 11 o'clock at night, and insisted upon his immediate discharge from the hospital, he knew that it was a case of cardiac disorder.

Some time ago a little girl, the daughter of a clergyman, began to show symptoms of unwonted irritability of temper. She was peevish, fretful, and quarreled with her brothers and sisters. This was looked upon as sinful, and the child was reproved or punished accordingly, until one day a doctor, who was a friend of the family, happened to put his ear to her chest and discovered that she was suffering from severe mitral regurgitation, with dilated heart.

In a paper published in the *Practitioner* in February, 1894, the author mentioned that unwonted irritability of temper was sometimes the precursor of a headache, and in that paper described the beneficial action of bromide of potassium and salicylate of soda in relieving headache. It occurred to the writer that in a case of heart disease the irritability might be relieved by the use of these drugs, and he has lately been trying them with a considerable amount of success. The subjective feelings of the patients have been improved, and, while they previously denied any improvement under the use of digitalis and other cardiac remedies, even although these had improved the objective condition, they acknowledged, after a few doses of bromide and salicylate, that they felt better. The mode of action of the bromide is readily enough understood, as it is a simple sedative to the nerve centres. The mode of action of salicylate is not so clear, although the admirable researches of Dr. Haig seem to point to its action indirectly by the removal of uric acid.

Lessened irritability of temper is useful not only to the patient but to his friends, and it is sometimes easier to treat patients by giving physic to their friends than by giving it to themselves; and frequently the other members of a family, friends or society have their appetites spoiled, their digestion impaired, and their pleasure in life destroyed by the irritability of one or two individuals; and anything that will lessen this irritability will do more to improve the health of the others than any amount of drugs can do of themselves.

THE TREATMENT OF THE DYING.

MUNK (*Practitioner*, July, 1896) says he knows of nothing in our attendance on the dying more gratifying than to witness the improvement in face, feature and expression that marks the kindly action of opium under these circumstances (the feeling of exhaustion and sinking referred to the stomach and heart in the dying). In an hour or thereabouts after it has been taken, some color returns to the face, the features lose somewhat of their sharpness, a placid expression replaces the look of anxiety, and the sufferer passes into an easy, gentle sleep, from which he awakes refreshed and comforted, and helped, as it would seem, to die more easily when his time arrives.

Hufeland, writing at the end of a long professional life, did not hesitate to declare that opium "is not only capable of taking away the pangs of death, but it imparts even courage and energy for dying." It must be administered in such doses as will appease suffering and disorder, and in this respect we are to be governed solely by the effect and

relief afforded. The dose for an adult should be rarely less than a grain, but oftener more. The effects of opium continue for about eight hours, and if its action is to be maintained it should be repeated at intervals of that duration or somewhat less. It should be given in liquid form, as the tincture or the liquid extract, or as morphine, of which the solution of the bimeconate is best. So long as the air-passages are not obstructed by secretion, so long as there is no lividity or even duskiness of the face, opium, if indicated, may be given in aid of the euthanasia; but if they are present it is hazardous and might hasten death. Much care, too, is needed in the employment of opium in cases where the heart is greatly enfeebled, and where the conditions directly or indirectly induced by opiates, especially that of sleep, may be just enough to turn the balance against it. A contracted pupil is also a contra-indication to opium; it implies a state of the brain which opium is likely to increase rather than relieve. And if food has been injudiciously pressed upon the patient so that the stomach is distended with it, and the epigastrium is full and tense, opium given by the mouth is rarely found to act kindly if at all. If, under such circumstances, the influence of opium is needed, we should resort to the hypodermic injection of morphine.

THE TREATMENT OF ABSCESS OR BOILS IN THE EXTERNAL AUDITORY CANAL.

Much depends, in the treatment of this condition, upon the question as to what has been the cause of the boil. For if it has depended upon general ill-health, systemic treatment is needed as well as local treatment. The disease goes through the condition of developing, maturity, and convalescence. During the stage of development the canal is found to be swollen and red, and severe lancinating pain is experienced, which is increased if the inflamed part be touched. Under these circumstances it is well to apply a solution of nitrate of silver in the proportion of one to ten per cent., or carbolized glycerin in the same strength. An ointment of belladonna and mercury will also give good results. After the boil has reached maturity, free drainage must be provided, preferably by means of a small wick of gauze which will drain the ear. Should the pain be persistent it will be well to apply one or two leeches in front of the tragus and to prescribe one of the following solutions, which may be dropped into the external auditory canal:

℞ Neutral sulphate of atropine, 1-30 grain;
Water, 6 drachms.

℞ Extract of opium, ½ grain;
Water, 6 drachms.

℞ Wine of opium, 1 drachm;
Distilled water, 1 ounce.

A few drops of any one of these solutions will do almost equally well. In other instances irrigation of the ear with hot antiseptic fluids or with water containing absolute alcohol is of value. If the boil is thoroughly matured, and the physician is sure that pus is present, an incision should be gently made in its most prominent and dependent part.—*Journal des Praticiens*, May 2, 1896.

TREATMENT OF ACUTE SORE THROAT OF NON-DIPHTHERITIC TYPE.

LYON, in the *Revue de Thérapeutique Médico-Chirurgical* of May 15, 1896, recommends the following treatment in sore throat not dependent upon a specific diphtheritic infection: Internally small doses of one of the salts of quinine or of antipyrin, either in cachet or in solution. Generally cachets are swallowed with too great difficulty by children:

℞ Antipyrin, 15 to 45 grains;
Water, 3½ ounces;
Syrup, 1 ounce.
A teaspoonful three times a day.

Or,

℞ Neutral sulphate of quinine, 7 to 15 grains;
Syrup, 6 drachms;
Syrup of codeine, 6 drachms;
Distilled water, 3½ ounces.
Teaspoonful at three- or four-hour intervals.

Sometimes, if there is a rheumatic taint in the case, benzoate of sodium and salol are useful. The dose of the salol should be large, and it is claimed that it will relieve the pain, reduce the temperature, and exercise a general anesthetic influence which is of value. Where the sore throat is accompanied by marked systemic disturbance, particularly with disorder of the digestive tube, it may be well to give benzo-naphthol, and, as a tonic, cinchona or alcohol.

The local treatment he recommends is to allow a small piece of ice to melt in the mouth, or to use a gargle of cocaine as follows:

℞ Boric acid, ½ ounce;
Hydrochlorate of cocaine, 7 grains;
Glycerin, 1½ ounces;
Water, 10 ounces.

Or the tonsils, if they are inflamed, may be painted with a glycerite of menthol and cocaine, such as hydrochlorate of cocaine 4 grains, menthol 15 grains, olive oil 1 ounce.

Compresses soaked in hot water may also be put about the throat and covered by gauze and rubber dam.

Locally antisepsis may be maintained by the use of gargles which may contain boric acid, salicylic acid, carbolic acid, or guaiacol.

The gargles which he thinks are most useful in ordinary sore throat are as follows:

℞ Salicylic acid, ½ to 1 drachm;
Borax, ½ to 1 drachm;
Honey, 1 ounce;
Distilled water, 8 ounces.

Or,

℞ Borax, 2½ drachms;
Hot water, 6 ounces.
After solution, add:
Tincture of myrrh, 1 drachm;
Syrup of mulberries, 1 ounce.

As a local application by means of painting, a mixture of equal parts of guaiacol and glycerin may also be employed. The guaiacol acts as a local anesthetic. After the patient is convalescent, care must be taken that relapse does not take place. The antiseptic gargles should be continued, and the following prescription may be given internally to aid this purpose:

℞ Crystalline carbolic acid, 1 drachm;
Alcohol, 6 drachms;
Essence of peppermint, 15 grains.

Eight to ten drops of this may be given in a glass of water.

THE USE OF ATOMIZATIONS OF ANTISEPTIC FLUIDS IN THE TREATMENT OF BOILS.

This method of treatment is recommended by several French surgeons in the treatment of furuncles, or even of carbuncles. It consists in placing a two-per-cent. solution of carbolic acid and water in an atomizer which will give a fine spray, and directing this spray against and around the part involved. It is claimed that this relieves the pain and swelling and does much toward modifying the severity of the disease process. Sometimes a solution of corrosive sublimate of ordinary strength for antiseptic purposes may be used in this manner. Care must be taken, however, that the spray is very fine and rapidly evaporates from the part affected. After the spray has been used for some minutes, the part is dressed with dry antiseptic gauze and covered by gum.

Very good results, so far as healing and relief of pain are concerned, also follow this treatment in some cases of burn. Care should be taken in all instances that the atomizer is not held so close to the skin that the spray strikes against the part with undue force. The applications should be made three or four times a day, and should last from a quarter to half an hour or even more.—*Journal des Praticiens*, May 30, 1896.

POISONING BY PYROGALLIC ACID.

DALCHE (*Journal des Praticiens*, May 30, 1896) records the case of a young man of twenty-three years, who swallowed half an ounce of pyrogallic acid in powder, which he had placed in water and absinthe. That night he was seized with black vomiting and a sensation of severe burning pain in the throat and stomach. The next day it was noticed that he had a slight general icterus. The urine was dark in color, and afterwards black, and contained albumin; it also contained methemoglobin. There was diarrhea and fever. The liver and spleen were swollen.

Four days after the drug had been taken the patient was delirious, and finally became comatose just before death. At the autopsy the alimentary canal, the lungs and the brain were found healthy; liver and spleen tumefied; kidneys of a dark color; and the blood showed evidences of profound alteration, with destruction of the globules, resembling somewhat the condition seen in paroxysmal hemoglobinuria.

THE TREATMENT OF VULVAR PRURITUS.

In the *Journal de Médecine de Paris* of June 30, 1896, we are told that the following forms of treatment are useful in this troublesome condition:

After the removal of any distinct cause, general or local, the treatment consists in the use of starch baths, hot or cold lotions containing belladonna, blisters of cantharides or cauterizations with a ten-per-cent. solution of nitrate of silver if the condition is acute. If it is chronic, weak sulphur baths (which should contain five to ten drachms of sulphite of sodium and from one to two ounces of bicarbonate of sodium, with a quart of mucilage made from linseed) may be employed. Lotions or injections of corrosive sublimate in the strength of 1 to 1000, or of carbolic

acid 1 to 200, or of borax 300 parts to 1000, or of nitrate of silver or lime, may be employed. If the case is one of diabetic pruritus, the borax lotion should be used after each act of micturition. If the pruritus depends upon metritis or uterine cancer, vaginal tampons soaked in boroglyceride are often very useful. As a nervous sedative the following powder may be used to allay irritation:

℞ Neutral glycerite of starch, 6 drachms;
Subnitrate of bismuth,
Bromide of potassium, of each, 15 grains;
Calomel, 5 grains;
Powdered belladonna, 2 grains.

This is to be employed locally, and relief usually follows within a few minutes after the application.

The following vaginal injection may also be employed in some cases with advantage:

℞ Infusion of marshmallow, 1 quart;
Cherry-laurel water, 1 ounce;
Borax, 2½ drachms.

Or the following ointment:

℞ Chloroform, 45 minims;
Vaselin, 1 ounce.

A SOLUTION FOR STOPPING REBELLIOUS EPISTAXIS.

In the *Revue de Thérapeutique Médico-Chirurgical* of June 1, 1896, the following prescription for this purpose is given:

℞ Corrosive sublimate, 1 grain;
Dilute hydrochloric acid,
Tincture of cannabis indica, of each, 2 drachms:
Ergotin, 30 grains;
Simple syrup, 1 ounce;
Infusion of quassia, 8 ounces.

Three large teaspoonfuls of this solution may be taken each day in a glass of water.

THE USE OF METHYLENE BLUE IN CHRONIC BRIGHT'S DISEASE.

In the *Journal de Médecine de Paris* it is stated that NETCHAIEFF has employed methylene blue in both acute and chronic Bright's disease. A man aged fifty years suffered from intercostal neuralgia and the cardiac difficulties consequent upon renal disease. He had a *bruit de galop*, visual disorders, painful polyuria, albuminuria, and hyaline casts in his urine. Under these circumstances he was given 1½ grains of methylene blue each day, beginning on the seventh day of March. On the 31st of March, the patient, having taken some of the drug but failing to carry out instructions as to diet or manner of life, presented himself again, with ascites and edema of the feet; he was not, however, so easily fatigued; the heart sounds were better, and there was not the *bruit de galop;* the albumin had markedly diminished in the urine, as had also the hyaline casts. After a short period, in which the treatment was continued and rest insisted upon, there was still greater improvement, so that by the second day of July every trace of albumin was lost, the hyaline casts had entirely disappeared, and also the polyuria and painful micturition.

POISONING BY THE OXIDE OF CARBON TREATED SUCCESSFULLY BY THE INTRA-VENOUS INJECTION OF ARTIFICIAL SERUM.

BRODIER reports in *La Médecine Moderne*, June 13, 1896, the case of a patient aged thirty-one years who was brought to the hospital suffering from asphyxiation due to inhalation of oxide of carbon during the previous night. The patient was comatose, and the reflexes were lost. Altogether his condition was exceedingly grave, the respirations being 44 per minute and the inspirations short and abrupt, while the expirations were prolonged. The stertor was intense, and finally the respirations became 52 per minute. There was nystagmus, the pulse was rapid and feeble, the temperature normal. The condition of the patient was so grave that any therapeutic measures were considered useless, but nevertheless he was given inhalations of oxygen and injections of ether. After six hours he was no better, the coma persisted, and the respirations, while less rapid, were still stertorous; nystagmus was also present. Under these circumstances a quart of artificial salt solution was injected, at a temperature a little above that of the body, into the median cephalic vein, the operation lasting twenty minutes. A quarter of an hour afterwards the patient was seized with a violent chill, and twice vomited bilious-looking material and at the same time broke out into an abundant sweat. Two hours afterwards, as the symptoms did not improve, another injection of saline solution was given. On catheterization, nearly a pint of clear liquid, which contained a small quantity of albumin and sugar, was obtained. Four hours after he was brought into the hospital the trismus had ceased, respirations were calm and regular, and catheterization obtained nearly a quart of urine. The patient returned to consciousness, and complained of violent frontal headache and great anorexia.

The retention of urine persisted, and there were fibrillary twitchings in the lower extremities. The glycosuria did not continue, but the albuminuria lasted for eight days. The patient left the hospital completely cured twelve days after his entrance.

Brodier states that it is difficult to appreciate the value of saline injections in poisoning by oxide of carbon, and calls attention to the experiments of Moromarco in 1892 which were made after the proposal of Kühne that saline injections should be used in all forms of grave poisoning. Cases have been reported by Schreiber, Bergman, and Fraentzel, of the advantage of this method of treatment.

THE TREATMENT OF EPILEPSY BY SULPHATE OF DUBOISINE.

In *La Riforma Medica*, CIVIDALI and GIANNELLI state that they have found that the sulphate of duboisine diminishes the number and intensity of epileptic attacks. They obtained the most favorable results in those forms of epilepsy which were associated with psychical disorders. The dose they administered was $\frac{1}{120}$ grain, which might be increased to as much as $\frac{1}{60}$ grain if the first dose did not seem sufficient. They do not find that the drug produces too much local irritation, provided strict antiseptic precautions are taken when it is injected.

THE TREATMENT OF RED NOSE.

LASSAR (*Derm. Ztschr.*, 1895, p. 489) recommends scarification after various methods of exfoliation have failed. Fifteen- to twenty-per-cent. resorcin paste is his favorite agent for producing the exfoliation. A superior method to scarification, since it leaves only fine scars, is acupuncture, done with forty points mounted on a solid disk one centimeter in diameter, which is worked by an electro-motor and stamping machine like that used in filling teeth. Thousands of pricks, very light and of desired depth, may be made in a few moments. Consecutive treatment is rarely necessary. In rhinophyma, which he regards as an adenocystic fibroma without epithelial proliferation, Lassar removes the hypertrophied tissue by ablation or decortication, covering the surface with Thiersch grafts, or leaving it under iodoform collodion, which in many cases serves as well.—*Journal of Cutaneous and Genito-Urinary Diseases*, July, 1896.

A PRESCRIPTION FOR GALACTORRHEA.

JORIE states that he has found the following prescription, applied by means of gauze compresses, to be efficient in suppressing the secretion of milk:

℞ Hydrochlorate of cocaine, 1 drachm;
Water and glycerin, of each ½ ounce.

This application can be made without inconvenience, and results in the complete suppression of the secretion of milk in from two to six days.—*Journal des Praticiens*, June 13, 1896.

A SOLUTION FOR THE PAINLESS EXTRACTION OF TEETH.

The *Therapeutische Monatshefte* states that the following prescription may be injected in the dose of a few drops into the gum around a tooth which is to be extracted:

℞ Hydrochlorate of cocaine, 3 grains;
Hydrochlorate of morphine, ¼ grain;
Chloride of sodium, 4 grains;
Antipyrin, 30 grains;
Guaiacol, 2 drops;
Distilled and sterilized water, a sufficient quantity to make 3½ ounces.

AN ANTISEPTIC POWDER.

We are told by the *Journal de Médecine de Paris* of June 14, 1896, that the following makes a useful antiseptic powder, equal to iodoform in value, but without its odor:

℞ Powdered iodoform,
Powdered benzoin,
Powdered cinchona,
Powdered carbonate of magnesium with oil of eucalyptus, equal parts.

This powder is also absolutely without danger.

THE USE OF CALOMEL IN DISEASE OF THE HEART.

MOLDARESCU states that in his opinion calomel is of very great value in the treatment of cardiac disease. He administers as large doses as eight to ten grains each day, divided into six doses, which may be given every two or three hours. In those cases in which there is a comparatively small cardiac lesion with marked dyspnea and hypertrophy or dilatation, with albuminuria, edema, and ascites, he finds that this treatment is useful. After the first few doses have been given, as a rule an increase in diuresis is established, and by the second or third day quite copious evacuations of the bowels take place. The respiration is more easy; the liver is less con-

gested and smaller in volume; the urine is more abundant and clear, and closely approximates the normal quantity, after the third or fourth day exceeding this amount; and there is a marked improvement in all the symptoms, cardiac and otherwise. Even when the calomel is no longer administered, these good results persist for twenty-four to forty-eight hours. As a rule, however, it is better to administer smaller doses, such as one to two grains a day, for a considerable period. In order to prevent excessive salivation, or to relieve it when already produced, Moldarescu prescribes the following mouth-wash:

℞ Chlorate of potassium, 2½ drachms;
Tannic acid, 4 grains;
Distilled water, 10 ounces.

He believes that the way in which the calomel does good is by relieving the congestion of the liver and the renal circulation, in this way indirectly reducing the resistance to the heart produced by arterial pressure. At the same time that the calomel is administered he orders an absolute milk diet.

Out of 107 cases of grave cardiac disorder with distressing symptoms of failure of the heart, treated in this manner, he has had fourteen deaths; two of these died of pneumonia after the heart symptoms were relieved; three died before the treatment had sufficient opportunity to be tried; the remaining nine cases were of advanced years and the disease was also far advanced. Moldarescu, of course, does not pretend that calomel can cure heart disease, but he believes that it prolongs life, ameliorates the symptoms, and does the patient great good; after the patient has been relieved by calomel, the administration of iodide of potassium is of value.—*Revue de Thérapeutique Médico-Chirurgical*, June 1, 1896.

A SOLUTION FOR STOPPING FALLING OF THE HAIR.

℞ Hydrochlorate of quinine, 1 drachm;
Tannic acid, 2 drachms;
Alcohol, 70-per-cent., 1½ pints;
Tincture of cantharides, 2½ drachms;
Pure glycerin, 1½ ounces;
Cologne water, 10 drachms;
Vanillin, 2 grains;
Pulverized sandalwood, 1 drachm.

This mixture, after being well mixed and shaken, is allowed to stand for four days, and is then filtered. It is rubbed into the scalp daily for the purpose named.—*Revue de Thérapeutique Médico-Chirurgical*, June 1, 1896.

A POWDER FOR SUPERFICIAL ULCERATION AND SUPPURATION.

A useful drying powder for this purpose is recommended by SCHWARTZ (*Journal des Praticiens*, June 13, 1896). It consists in powdered iodoform, salol, powdered subnitrate of bismuth, powdered charcoal, powdered cinchona, powdered benzoin, of each equal parts.

TREATMENT OF SUMMER DIARRHEA.

REINACH, of Von Ranke's clinic (*Münch. Med. Woch.*, May 5, 1896), observes that the treatment of acute gastro-intestinal affections in quite young infants has two objects: (1) the prevention of the ill-effects due to the consequent thickening of the blood; and (2) rest for the diseased tract. A third indication may be put down as the providing nourishment in other ways. The first indication is met, though often imperfectly, by stimulants, mustard baths, etc. Monti and Epstein practiced with good results the subcutaneous infusion of saline solution. Grawitz showed that the injection of serum produced a thinning of the blood. With this object the author has treated fifteen cases of infantile diarrhea with sterile serum obtained from calves. Only the worst cases were selected for this purpose. Of the fifteen cases, four died, but two of these had, in addition to the gastro-intestinal affection, broncho-pneumonia. Ten to twenty cubic centimeters of the serum was injected. In one case a measles-like eruption appeared in fourteen days. The age of the infants varied from fourteen days to nine months. The effect of the injection upon the general condition was decidedly good. The collapse temperature rose to normal, once to 101.3°. Usually the injection was given in the evening, and on the next morning improvement was noted. No local treatment was adopted. Rice-water was given during the first twenty-four to forty-eight hours. The author then refers to recent attempts to inject albuminous bodies subcutaneously. In twenty cubic centimeters of serum the amount of albumin is small, but perhaps larger quantities of the serum might be used. In 20 Cc. of serum there are 1.5 grammes of albumin, and this amount corresponds to 50 grammes of undiluted cow's milk and 150 grammes of mother's milk. The absence of fat could be compensated for by the injection of cod-liver oil. A deficiency in the nourishment will, however, still remain. The abstention from feeding

by the mouth need only extend over one to two days, so that help ought to be given by the injection of even small quantities of assimilable nutrient material. This treatment is being further investigated in the clinic.—*British Medical Journal*, July 11, 1896.

THE TREATMENT OF THE VAGINAL MUCOUS MEMBRANE IN CASES OF PROLAPSE OF THE UTERUS, RECTOCELE, OR CYSTOCELE.

LUTAUD advises injection, morning and night, of boric acid in the strength of 40 to 1000, followed by the application by means of a brush of a fresh solution of permanganate of potassium containing four grains of the permanganate to one ounce of water. He takes care not to touch the urinary meatus with this solution, which is applied only to the vaginal mucous membrane. He then applies a tampon of dry wool, and repeats the application named every two days. In other instances, by means of a speculum, a large tampon of absorbent cotton, wet with the following solution, is used:

℞ Salicylic acid, 4 grains;
Naphthol, 8 grains;
Chloral, 45 grains;
Alcohol, 6 drachms;
Water, 8 ounces.

Should the salicylic acid exercise a too irritating influence, as is frequently the case, the following may be employed:

℞ Tincture of iodine, 1 drachm;
Tannic acid, 4 drachms;
Glycerin, 2 ounces.

A tampon is thoroughly wet with this solution, and by the aid of a speculum carried up into the vaginal canal, where it is allowed to remain for twenty-four hours, and after the lapse of one day the operation is repeated. In some cases an astringent powder is very useful, such as:

℞ Tannic acid,
Iodoform, of each, 45 grains;
Lycopodium, 1 ounce.

Should the odor of the iodoform be disagreeable to the patient, we can employ:

℞ Tannic acid,
Oxide of zinc,
Salol, of each, 45 grains;
Lycopodium, 1 ounce.

After this powder has been used by insufflation, it is kept in place by a tampon of absorbent cotton. In some instances a large quantity of the powder may be introduced into the vagina by means of a spatula and kept in place by means of a tampon. These dry applications have to be renewed every day, and before being renewed the vagina has to be cleansed of the previous application and of all secretions.—*Journal de Médecine de Paris*, June 14, 1896.

THE TREATMENT OF ECZEMA.

The *Revue de Thérapeutique Médico-Chirurgical* of June 1, 1896, tells us BARAZZI treats eczema locally, by the use of internal drugs, and by dietetic measures. The local treatment varies, of course, as to whether the inflammation is acute or chronic. In the acute eczema he distinguishes three varieties: the stage of vesiculation, the stage of drying, and the stage of desquamation. In the first period he employs soothing applications. Thus he endorses the method of Besnier, who uses poultices composed of potato applied during the night. During the day the inflamed surface is dressed by compresses of sterilized gauze, outside of which is applied a sheet of gum. In other instances, instead of moistening the gauze with boiling water, the following solutions may be applied:

℞ Resorcin, 40 grains;
Boiled water, 1 quart.

Or,

℞ Ichthyol, 15 grains;
Boiled water, 1 pint.

When it is necessary to employ a drying application he uses the following powder:

℞ Powdered talc,
Powdered starch,
Powdered oxide of zinc, of each, 2½ drachms.

Or he uses the ordinary oxide of zinc in vaselin in the proportion of equal parts. Or the following may be employed, which is known as Lassar's ointment:

℞ Oxide of zinc, and starch, of each 6 drachms;
Salicylic acid, 7 to 30 grains;
Vaselin, 2 ounces.

Or, in place of this:

℞ Salicylic acid, 8 grains;
Oxide of zinc, and starch, of each 6 ounces;
Lanolin and vaselin, of each 6 to 8 ounces.

Should the eczema affect the skin of the face, in place of poultices he employs atomizations of sterilized water repeated two or three times a day and lasting half an hour or longer, the face being afterwards covered by a mask of sterilized gauze which in turn is covered with rubber dam at night. On the other hand, if the eczema is diffused all over

the body, olive oil and lime-water ("Carron oil") may be used as a softening dressing. When it is necessary to exercise an astringent influence because of too great secretion of the skin, the following prescription may be used:

℞ Tannic acid, 30 grains;
Calomel, 15 grains;
Glycerite of starch, 1 ounce.

Or,

℞ Oxide of zinc, 2½ drachms;
Salicylic acid, 8 grains;
Vaselin, 6 drachms.

Should more energetic remedies still be required, we may use:

Salicylic acid, 15 grains;
Balsam of Peru, 1 drachm;
Tincture of benzoin, 15 to 30 drops;
Vaselin, 1½ ounces.

Or, if still more energetic and practically irritant dressings are needed, we may use:

℞ Oil of cade, 2 drachms;
Glycerite of starch, 1½ ounces.

Or,

℞ Tar, 15 to 60 minims;
Vaselin, 4 ounces.

Or guaiacol and vaselin may be used in the same proportions.

In exceedingly obstinate cases, painting the part with nitrate of silver 15 to 45 grains, and distilled water one ounce, may answer. If this application produces very marked inflammation of the skin, it must be modified by the use of poultices.

The general treatment depends somewhat upon the diathesis of the patient. If there is arthritic trouble the alkaline treatment must be resorted to, and bicarbonate of sodium, fifteen to sixty grains, must be given each day, or large quantities of mineral waters containing bicarbonate of sodium should be taken, such as Celestins, Vichy, or Vals water.

If there is arterio-sclerosis, the following prescription is to be employed:

℞ Iodide of potassium, 5 drachms;
Syrup of bitter orange, 10 ounces.
One to two dessertspoonfuls after each meal.

The following pill may also be given in some cases with advantage, particularly where there is excessive secretion of the skin associated with debility:

℞ Hydrobromate of quinine, 1 grain;
Extract of belladonna, ⅙ grain;
Extract of gentian, 1 grain.
To be made into one pill.

Four or five of these pills are to be taken each day.

Should the patient be strumous, cod-liver oil, iodine and arsenic should be used. The oil should be gradually increased until large doses are taken. The iodide of iron should be given in the dose of one to two grains, and the arseniate of sodium in the dose of $\frac{1}{60}$ to $\frac{1}{30}$ grain. For nervous persons the following prescription is of great value:

℞ Tincture of valerian, 6 drachms;
Dilute sulphuric acid, 3 drachms;
Orange-flower water, 4 ounces;
Syrup, 4 ounces.

One to two teaspoonfuls a day may be given. Or the following pill:

℞ Extract of valerian, 3 grains;
Asafetida,
Extract of gentian, of each, 1 grain.
Five or six pills each day.

If the eczema seems to be dependent upon disturbance of digestion, the digestive disorder must be corrected, and for this purpose constipation must be overcome by laxatives such as senna, podophyllin, or some of the saline laxative waters. If there is a tendency to phosphaturia, the following may be used:

℞ Benzoate of sodium,
Carbonate of lithium, of each, 8 grains.
Make into one cachet and give one or two a day.

The dietetic treatment consists in the prohibition of all alcoholic beverages save a small quantity of wine with a little water. Coffee and tea are diminished in quantity as far as possible, being only allowed two or three times a week. In the way of food, fish, crabs, clams and oysters may be given in preference to red meats. The patient is not allowed to take asparagus or cucumbers. Eggs, milk and other light articles of diet are exceedingly useful. All fermented drinks are absolutely prohibited, and on general principles all acid fruits are cut out of the diet list.

THE TREATMENT OF ERYSIPELAS OF THE FACE.

In the *Journal des Praticiens* of June 20, 1896, we are told that it is well to apply gauze compresses wet with a warm solution of boric acid, or if the tension of the skin is very marked we may employ the following ointment:

℞ Salicylate of sodium, 1 drachm;
Cold cream, 4 ounces.

Or a solution of salicylic acid may be employed in its stead, such as:

Salicylic acid,
Borax, of each, 1 drachm;
Boiled water, 1 pint.

Or, again:

℞ Salicylate of sodium, 2½ drachms;
Boiled water, 1 pint.

Should there be a tendency on the part of the erysipelas to produce sloughing, as in persons who are suffering from Bright's disease, alcoholism, or diabetes, it is well to try atomizations of weak sublimate solutions over the surface and to apply a mixture of traumatacine and ichthyol, the traumaticine to be made by dissolving ten parts of gutta percha in ninety of chloroform. This application is painted around the inflamed area to a distance of half an inch or more with sufficient frequency to maintain a constringent influence upon the surrounding tissues. It is claimed that in the course of two days the progress of the erysipelatous inflammation will be arrested, and that forty-eight hours afterwards the erysipelas will disappear.

THE TREATMENT OF NEURALGIA.

℞ Menthol,
Guaiacol, of each, 15 grains;
Absolute alcohol, 5 drachms.

A small quantity of this mixture is gently rubbed over the painful spot, which is then covered by a piece of cotton. This can be repeated two or three times in the twenty-four hours.—*Journal de Médecine de Paris*, June 14, 1896.

THE USE OF FORMALIN IN OPHTHALMIC PRACTICE.

BURNETT, of Washington, in the *National Medical Review* for July, 1896, tells us that formalin is a forty per-cent. watery solution of formaldehyde. Formal, the German preparation, is of approximately the same strength. Formaldehyde itself is a strong escharotic and one of the most powerful germicides and antiseptics known: animal tissues suspended in its fumes are preserved from putrefaction. As a tissue-preserver, formalin has no superior, and will no doubt supplant alcohol for that purpose, since it is much cheaper and has many other advantages as a preserving agent. In the first place, it does not act by extracting the watery constituents from the tissues, and there is, therefore, no shrinkage and consequently no distortion of the elements from their normal relations. The tissues also retain much of their original color and transparency: even the crystalline lens does not become completely opaque under its influence for quite a long while. In the preparation of tissues for section for microscopic examination, therefore, it is vastly superior to alcohol, or Müller's fluid, or any other agent hitherto employed for that purpose, and it has the further advantage of being very rapid in its action. An eye will become sufficiently hard for cutting in three or four days in a five-per-cent. or ten-per-cent. solution, which is the strength usually employed as a hardening agent.

The ophthalmological world first became aware of the value of this quality of formalin through Professor Leber, of Heidelberg, at the Ophthalmological Congress in Edinburgh in 1894. The credit of its first use, however, belongs to Hermann. Lowe, in 1888, first observed its great germicidal power.

It is feebly if at all toxic: no case has been reported of any deleterious effect from its use. It surpasses all other antiseptics in the rapidity with which it diffuses itself through the tissues, both living and dead. One great drawback to the efficiency of sublimate, as we know, in addition to the toxic effect, is its power of coagulating the albumin at or near the surface, which thus not only forms a barrier to its further penetration of the tissues, but even constitutes a good nidus for the development of pathogenic germs. For this reason, therefore, formalin should be more useful than any other known germicide for that class of infections in which the microbes penetrate below the surface and into the substance of the tissues.

Most excellent results have been obtained from formalin in infecting ulcers of the cornea and purulent conjunctivitis. The corneal ulcer can be touched with a solution of 1:200 or 1:500 once every day, and a collyrium of 1:1000 or 1:2000 employed as a general antiseptic. The writer has a few times cauterized the ulcer with a 1:100 solution. One case of serpiginous ulcer he treated with formalin alone, and it turned out more satisfactorily than he has seen such cases do by the old methods. In muco-purulent and purulent conjunctivitis his experience with it has been most satisfactory. He has not yet relied upon it alone in the severe forms of purulent conjunctivitis, but in the milder forms he has, and has had no reason to regret having done so. Even in the severe cases he has used it as a general antiseptic in addition to the silver nitrate. In acute catarrh of the conjunctiva (pink eye) it has acted most promptly when used as a collyrium of the strength of 1:1000 or 1:2000, applied every four hours. He has also tried

it in those cases of chronic conjunctival congestion with diminished secretion which are often so rebellious to treatment, and in most instances with good results. In ulceration of the edges of the lids, the remedy has seemed to act well; the dosage is to be regulated by the desired effect, from 1:100 as a mild caustic, to 1:2000 as a stimulant. The writer commends it to the surgeon and dermatologist as most valuable in ulcers of the skin of all kinds, and especially for those indolent ulcers with hard edges resembling epithelioma; he reports the effect on one such ulcer of the lower lid as very decided and prompt.

Formalin has the great advantage of not dulling the edges of the knives it disinfects. It can also be used for washing out the conjunctiva previous to operation on the eye, though it causes a slight burning sensation, sometimes even in solution of 1:1000.

So far as the writer's knowledge of the literature of the subject goes, formalin has been used therapeutically in eye affections by only a few. Guaita, of Siena, and two English surgeons have written brief accounts of their experience with it.

THE TREATMENT OF TYPHOID FEVER.

WHIPHAM, in the London *Lancet* of July 11, 1896, gives a summary of two lectures on this subject. He believes that from first to last in enteric fever our attention should be chiefly directed to the action of the bowels. The practice of administering some mild saline purgative medicine, with the view of clearing the bowels of their poisonous contents, has found favor with some, more especially in France, and in many cases doubtless no harm follows the treatment. But then in other and perhaps equally numerous instances no harm follows the opposite treatment—viz., that of leaving the bowels alone till they act of their own accord. In many cases there will be no motion for four or five days at the beginning of the attack, and this without any untoward symptom and without any complaint of discomfort on the part of the patient. The administration of a purgative in enteric fever is always a matter for very careful consideration. It may be quite safe at the beginning of the attack and an extremely dangerous proceeding in the later stages, and it sometimes happens that one of the great difficulties is the impossibility of settling the exact day of the fever in a given case. It may not be possible, in a mild case, to say whether the disease is at the end of its first or second week. It is for these reasons, then, that much caution is required in administering purgative medicines, for they may set up a diarrhea which may be extremely difficult or even perhaps impossible to control.

The next point is this: Are we to order any particular drug at regular intervals in an uncomplicated case of enteric fever; and if so, what is the object in view? If there is any symptom which, judging from experience and the results of scientific experiments, in the majority of instances yields to, or is relieved by, any particular drug, then it is proper to prescribe that drug, providing the symptom is of such importance as to increase the gravity of the patient's condition; otherwise, suitable diet and a good nurse will be sufficient. Such treatment may be called do-nothing treatment. But are we doing nothing when we are carefully selecting proper food, regulating the times of its administration, with the quality of the pulse, the range of temperature, and the condition of the nervous system as our guides; when we are apportioning the amount of stimulant in accordance with the requirements of that nervous system? At all events we are doing no harm.

Of the drugs which have found favor in the treatment of enteric fever, those which, arguing by analogy, might be expected to exercise some neutralizing or destructive effect upon the cause of the fever, or which by their antiseptic properties may be supposed to purify the contents of the intestines, may be properly employed. Such are quinine, carbolic acid, salol, and perchloride of mercury. But as the result of experience the writer states that he has never seen any such marked improvement in any series of cases treated with these drugs as to lead him to prescribe them in a case of moderate severity in which there were no symptoms calling for special treatment. Quinine he has seen given in large doses—in one instance fifty grains were given in three hours without in any way affecting the course of the disease.

Many years ago Sir Henry Pitman, when carbolic acid first came into use, treated a number of cases with it, pushing the dose until the urine acquired the usual bistre color. In none of these cases, which some of us watched at the time with great interest, did any beneficial result follow with which the drug could be credited. Eventually Pitman abandoned it as useless.

Perchloride of mercury has been tried by

many physicians; the diarrhea has in some cases seemed to be diminished by it. In other cases, varying in severity, the author has given it, but without observing any definite results either good or bad.

With proper management and without drugs many a case of this fever will run its course to a favorable termination. An effervescing mixture of ammonia, or a saline mixture—*e.g.*, potassium citrate—given every four hours, is agreeable to the patient and does not mask symptoms.

The dangers of enteric fever increase with the progress of the disease, and in all cases, even the mildest, the third and fourth weeks are the anxious time. It is then that the worst complications—hemorrhage and perforation—are to be feared; it is then that the skill of the physician and the good qualities of the nurse are most essential to the welfare of the patient. The control of excessive diarrhea, upon which the nervous exhaustion and the condition of the lungs partly depend, is of the first importance, and it should if possible be checked at once. The means at our disposal are astringents and opium, which may be given by the mouth or by the bowel, preferably the latter. A most careful scrutiny should be made as to the possibility of any error in diet. That this may be necessary, even when more than ordinary care is bestowed upon the case, is shown by the following incident in the practice of the late Sir William Gull. He was called to see a severe case of enteric fever in consultation with the patient's ordinary medical attendant, the prominent symptom being profuse and uncontrollable diarrhea. Gull found, after hearing the account of the case, that all the usual remedies had been tried one after the other, and yet the diarrhea persisted. Having examined the patient, he looked around the room, and on a shelf saw an array of bottles of various meat extracts and juices. Pointing to them, he said to the medical attendant: "There is the cause of the diarrhea; leave them off at once, and give your patient some milk and ordinary home-made beef-tea, and be guided by the result." The advice was followed, the diarrhea was controlled, and the patient recovered. But even when the diet is most carefully adapted to the necessities, there may be obstinate and exhausting diarrhea, the result of putrefaction of the undigested portions of the food. Our object, then, is to arrest this putrefaction, and the catarrhal condition of the mucous membrane which accompanies it. Here, possibly, the perchloride of mercury produces its good effect, and it may be given with scruple doses of carefully powdered animal charcoal. So efficacious had this latter remedy been in Sir William Jenner's experience that he wrote in the lecture quoted: "This has given me such satisfactory results that I have not resorted to other remedies of its class." It is, however, often necessary to supplement such treatment by opium; but it is necessary to bear in mind that opium given by the mouth destroys the appetite, and therefore it is better to give rectal injections of from ten drops to half a drachm, according to the requirements of the case, repeating the enema in three or four hours should diarrhea recur. It often happens, however, that the rectum is very irritable and small motions are passed perhaps two or three times in the hour; enemata of starch, with or without opium, usually check them at once. But at other times copious watery evacuations occur at very short intervals, and it is then that a difficulty arises so far as the enemata are concerned. Either the fluid injection is at once expelled by the irritable rectum or it is washed out, perhaps in two or three minutes, by the next watery discharge from the intestines above. A patient in this condition is in a state of extreme prostration, delirious possibly, with parched lips, dry tongue, and sordes on teeth. Whipham has found great benefit from a powder consisting of hydrargyri cum creta 3 grains, pulveris ipecacuanhæ compositi 10 grains. He has seen diarrhea quickly subside after one such powder, while at the same time the symptoms of nervous exhaustion passed away. In restraining the diarrhea, lead and opium combined in the form of the pilulæ plumbi cum opio of the British Pharmacopœia give excellent results in some cases, and it may for a time (as short a time as possible) be found necessary to have recourse to other astringents by the mouth—*e.g.*, pulvis cretæ aromaticus cum opio or the pulvis kino cum opio.

So far no mention of alcohol has been made as part of the treatment of enteric fever; to enter on the reasons for and against its use would occupy more space than is at our disposal. Still it is impossible to omit all mention of it when considering the management of the later stages of the disease. In the majority of cases, occurring as they do in young persons, alcohol is not needed at first; in fact, it may with advantage be dispensed with altogether during the whole course of the fever. In severe attacks, however, when

diarrhea, tympanites and prostration supervene in the third and fourth weeks, it may be given freely when the symptoms are urgent, but always under close supervision. If the appetite fails and exhaustion is great, alcohol may be given every hour, perhaps every half-hour in bad cases. It is impossible to lay down any hard and fast rule with regard to the amount of alcohol; the dose depends entirely upon the idiosyncrasy of the patient and his strength at the time. The indications for administration or for increase in the quantity already ordered must be looked for in the quality of the pulse, the clearness of the first sound at the base of the heart, and the condition of the nervous system.

In the cardiac failure which so often occurs in the third or fourth week of the fever, digitalis or strophanthus may be tried; but in the writer's experience these drugs have been on the whole disappointing, and better results have followed the administration of ether, ammonia, and alcohol. In very severe cases, when it is difficult to induce the patient to take food, and exhaustion is great, it is of the utmost importance to avoid increasing the distaste for nourishment by giving any drug except alcohol by the mouth. Stimulants may then be given in the form of enemata. At one time the author had a nurse who, from attending a very grave case of enteric fever, contracted the disease, and had so severe an attack that for some hours in the fourth week her life was despaired of. Ether, in the dose of half a drachm, was injected into the rectum when the symptoms were most alarming, and with the best possible effect. The delirium subsided, the subsultus tendinum was diminished, the pulse at once improved in quality, and the patient from that time progressed steadily towards recovery.

Bronchitis is rather a concomitant of enteric fever than a complication, and unless it is severe and involves the small bronchial tubes it is better to regard it as part of the disease and to avoid the risk of producing nausea and impairment of the appetite which follow the administration of the ordinary expectorant drugs, such as ipecacuanha and squill. These should only be employed when the bronchitis becomes so severe as to endanger the patient's life, and even then the inhalation of oxygen is, perhaps, a more efficacious method of relieving the distress.

Hypostatic congestion of the lungs is one of the more serious complications of enteric fever, and adds greatly to the gravity of the patient's condition. Being due to failure of the nervous and the circulatory systems, it is best treated by a free use of stimulants—alcohol, ether, and ammonia—rather than by any of the remedies usually prescribed for pneumonia. Very satisfactory results have followed turning the patient first onto one side for an hour or so, and then onto the other; by the action of gravity the engorgement of the uppermost lung is relieved and the circulation in it materially improved. The patient may at the same time be freely supplied with oxygen.

The most serious complications of enteric fever are hemorrhage from, and perforation of, the bowel. With regard to the latter, but little can be done in the way of treatment beyond relieving the pain if it exists, and adopting such means as are likely to sustain the failing powers. Hemorrhage from the bowel may occur comparatively early in the course of an attack of enteric fever—in the second week. The melena is then the result of oozing from the blood-vessels of the congested agminate glands. It is not common at this stage, and if it occurs it is in small amount usually and is of far less grave import than even a small hemorrhage in the third or fourth week, and probably all that will be required in the way of treatment is to keep the patient perfectly quiet. In the later stages hemorrhage may occur in large quantities and is then a cause of grave anxiety or alarm. It occurs sometimes so severely from an eroded blood-vessel on the floor of one of the ulcers that there is an instant fall of perhaps three or four degrees of temperature, while at the same time the patient becomes suddenly blanched. Such an accident is, of course, a most alarming complication, but it is not necessarily fatal. One of the worst hemorrhages Whipham has ever seen in enteric fever occurred a few years ago in a boy of about fourteen years of age, seriously ill, whose bed was next to that of a man who became delirious during the night. The man suddenly sprang out of his own bed and jumped onto the boy's abdomen. A most alarming intestinal hemorrhage was the consequence, and the worst result was expected. Under careful management, however, no recurrence of the bleeding took place, and the lad made an uninterrupted recovery.

In no disease is an accurate knowledge of the date of onset more essential than in enteric fever—in fact, its treatment depends in great measure upon such knowledge. If the history of the case shows that the patient is passing through the second week, and blood

appears with the feces, it is due to oozing from congested vessels, and if the patient remains completely at rest the hemorrhage tends to cure itself by the relief it gives to the engorged agminate glands. If rest fails to check it, an enema containing opium will probably have the desired effect by checking peristalsis.

Ergotin has a good reputation in hemorrhages, and the bleeding which occasionally takes place in the second week occurs under conditions in which this drug should theoretically be of much use. It produces contraction of the muscular coats of the arteries, and it is precisely under such conditions that it may be expected to do good. But if it is certain that the patient has reached the later stage of the disease, it may be assumed that the bleeding is due to erosion of a vessel, possibly of considerable size, on the floor of one of the ulcers, and ergot can have but little effect upon it; any contraction it might produce in the muscular coat of a comparatively large vessel would be quite insufficient to produce an appreciable diminution in the flow of blood from a large ulcerated opening or from the complete division of the vessel. Opium and the external application of cold are the most trustworthy remedies. Cold may be conveniently applied in the form of ice-bags to the abdomen, care being taken that the bags be not so large that by their weight when filled with ice they cause dangerous pressure on the distended intestines; or the abdomen may be covered with a sheet upon which several small lumps of ice may be placed. There is an objection, however, to this method—viz., that the bedclothes become saturated, and to exchange them for dry ones involves movement of the patient, and to change the position of a person under such circumstances greatly increases the risk of a fresh outbreak of the bleeding. Together with this external application of cold, opium should be administered in order to arrest whatever peristaltic action may still exist in the bowels. Unless the diarrhea is excessive and the action of the bowels recurs at short intervals, the opium may be given in the form of enemata of laudanum (ten minims to half a drachm) in starch solution, and repeated as may be necessary, its general effect being carefully watched. If the diarrhea be excessive, the urgency of the symptoms may render it necessary to give the drug by mouth, and for the moment its bad effects on digestion and the appetite must be disregarded. Under such circumstances the pilula plumbi cum opio is the most suitable preparation, in four-grain doses every four hours. Turpentine has found favor with many practitioners in bad cases of intestinal hemorrhage, and doubtless it is a useful hemostatic. The main objection to it is that it interferes with digestion, but, if other methods fail, trial of it should certainly be made.

In these cases of severe hemorrhage in enteric fever the practitioner will sooner or later have to face the responsibility of giving or withholding stimulants. If they are withheld entirely, fatal syncope may terminate the case; if they are incautiously employed, the hemorrhage may recur. If there are undoubted indications of failure of the heart's action, they are the only remedies likely to avert a fatal issue, and the risk of a recurrence of the bleeding must be placed against that of death from syncope. They should be administered under these circumstances, but as a matter of course they must only be given under the most careful supervision of the medical attendant in charge of the case.

One word more: It is essential that in cases of hemorrhage, however slight, any food which leaves solid residue in the bowels should be avoided as far as possible, because such solid residue is likely to irritate the ulcerated Peyer's patches and the inflamed mucous membrane in their neighborhood. It is advisable, therefore, that milk for the time being should be replaced by carefully prepared beef-tea, mutton-broth or chicken-broth, by meat-jelly, or by some of the more palatable extracts of meat which are nowadays so successfully prepared—by food, that is to say, capable of being absorbed by the stomach without leaving a residue which must eventually find its way into the intestinal canal.

MODERN TREATMENT OF ECLAMPSIA, CONSIDERED FROM A MEDICAL STANDPOINT.

MARX, in the *American Medico-Surgical Bulletin* of July 18, 1896, in speaking of the toxemia of pregnancy of acute diffuse nephritis, says that this class of cases includes the most frequent form of toxemia seen by the practitioner, and is, as a rule, characterized by frank and outspoken symptoms. Its timely treatment is highly important. The mere presence of albumin and casts in the urine, or of constitutional symptoms, should make the physician apprehensive, and cause the

patient to go to bed at once, and to stimulate every emunctory to excessive action.

It must be seen to that the patient has numerous watery movements every day, not only for the purpose of cleaning out the bowels and to check toxic absorption from that source, and to act on the liver in such a manner as to keep that organ above suspicion as a breeder of toxins, but to deliberately deplete the system and rid it of the poison supposed to be circulating in the blood. Marx, as a rule, has depended on large doses of calomel and jalap (fifteen grains of each), followed every day by large doses of Rubinat or Hunyadi water, even to the extent of hypercatharsis. Where obstinate constipation is present, or prompt action is required, elaterium one-eighth of a grain every hour till catharsis occurs, or croton oil, may be simply placed on the tongue; their action becomes manifest in a short time. If for any reason the patient is unable to take medicines by the mouth, saturated saline solutions by rectal injection or in drachm doses hypodermically act promptly as hydragogue cathartics. Under other conditions the hypodermic use of salines has answered the purpose admirably on more than one occasion.

To act on the skin is the next consideration. The writer has found nothing better than either the hot steam bath, given in bed, applied intermittently or continuously; or, twice a day, a very hot full bath, the temperature of the water being gradually increased to the highest endurable point, and the whole tub being covered with heavy woolen blankets, thus giving a sort of vapor bath. After half an hour or more, the patient is lifted out, blanket and all, placed in bed, and diuresis thus further favored. The unpleasant cerebral effects produced may be mitigated by the ice-cap or cold cloths to the head. Besides this, internally there may be used the spirit of mindererus, or, better still, the sweet spirit of nitre, which not only acts on the skin, but is a mild diuretic and of great importance as a nitrite, consequently a vasomotor dilator. As to jaborandi or its alkaloid, pilocarpine, the writer is absolutely and radically opposed to it from every standpoint, for while it acts as a certain and powerful diaphoretic, it lessens the urinary function very materially. Its heart-depressant effects alone would deter him from countenancing its exhibition, for he has seen such profound collapse from its use as to make him an "over-and-aboveboard" enemy of the drug. Its powerful action on the glands of the mouth and respiratory organs is such as to make the accumulation of mucus in the respiratory tract a decided objection to its use.

To directly influence urinary secretion, the diet is of first importance. It is essential that these patients take only that class of food which is blandest to the kidney, yet assists in increasing diuresis and is easy of assimilation, viz.: milk, buttermilk, kumyss, matzoon. The writer's preference is for milk, taken in large amounts, but not hastily swallowed. Where it causes indigestion, it should be taken by the tablespoonful. He has been accustomed to add to each glass of milk one- to four-drachm doses of the sugar of milk, a powerful diuretic and pleasant to take, recommended by the French school, and with which there has always been satisfaction. Again, it is very essential that these patients drink as much water as possible, to stimulate not only the skin, but the kidneys; preference being for a mild saline or pure spring water. Rectal injections of a physiological salt solution, one to two pints, a number of times a day, act exceedingly well, not only as a food, but as a direct urinary stimulant. As to drugs, their number is legion; their action should be in one direction; they should not act directly upon the kidney, which is an acutely inflamed organ under these conditions, but indirectly by stimulating the heart and at the same time lowering tension, in order to provoke diuresis.

The refrigerant diuretics of the sodium class (acetate, citrate, etc.), with an infusion of buchu or triticum, stand first; abstain from the use of potassium salts, since they are all powerful cardiac depressants. The usual formula given under these conditions, containing some preparation of digitalis, is, to the writer's mind, absolutely contra-indicated, since digitalis, possibly on account of its digitoxin, is not only a decided and direct renal irritant, but increases vascular tension. Its use is not questioned in chronic conditions, but is decidedly objectionable in acute nephritis. The customary administration of the time-honored tinctura ferri chloridi the author objects to for the reason that not only the iron, but the amount of alcohol it contains—while it may possibly influence the anemia of the nephritic state, and this is questionable—is too much of a kidney irritant to do anything but harm. Among the drugs of unquestioned value as true heart tonics and diuretics, may be mentioned: caffeine 1 to 5 grains, or one of its soluble salts in double the dose, every two to three

hours; nitroglycerin, $\frac{1}{150}$ to $\frac{1}{80}$ grain; sulphate of sparteine, ¼ to ½ grain; or the symptomatic remedies acting as vaso-motor dilators—nitrite of soda, chloral, small doses of opium, etc. Of strychnine he is a little wary in case of high-tension pulse, since its action increases arterial tension, but where the pulse is of low tension it is a very valuable remedy.

Of the lately much lauded veratrum viride, while he grants that veratrum is a symptomatic remedy of the greatest value, yet he questions its true curative and therapeutic worth in cases demanding its use. It has been used extensively, but in the face of conditions demanding its administration—*i.e.*, a rapid, full, bounding pulse—surgical means with subsequent uterine venesection will do about all that is required. It is, then, after the uterus is emptied, and then only, that its true value may become apparent. The statement made that when, under its influence, the pulse keeps slow, soft, and compressible, convulsions will not or do not occur, he wishes to deny emphatically and in unmeasured terms, since he has seen terrible convulsive seizures when the pulse was 60 and alarmingly feeble. While writing this article, a case came under observation one-half hour after labor (induced), in which the pulse after a convulsion was 178, full and bounding; hypodermics of full doses of veratrum sent the pulse down to 60 in one-half hour, and yet the worst fit the patient ever had occurred at this time. If, then, after labor, the pulse still remains full and bounding, it has been the writer's custom to give the fluid extract of veratrum, from five to ten minims to begin with, repeated in smaller doses every half-hour till the pulse became soft and slow. In order to overcome the depression which sometimes follows its administration, one-fourth of a grain of morphine is added to the dose. Other measures fulfilling the same indications are: belladonna, ammonia, atropine, and absolute rest. Veratrum should not be used in valvular lesions, or where the heart-muscle is weak, or in dilated or fatty heart. Under these conditions, where, as a rule, the pulse is feeble and rapid, large doses of nitroglycerin are indicated.

Of venesection he speaks as of veratrum. Where the condition is present to bleed, there is also a vital indication to empty the uterus; and if then venesection is indicated, let it be from that organ.

All the measures before indicated are purely tentative. By their use there is ever present the hope so to improve our patient's condition that she may be tided over to a time when labor may be induced or occur spontaneously.

MODERN TREATMENT OF ECLAMPSIA, CONSIDERED FROM A SURGICAL STANDPOINT.

In the *American Medico-Surgical Bulletin* of July 18, 1896, there is printed a paper with this title, by GRANDIN. Marx also has a paper on the Medical Treatment, to which we have referred. Grandin says that the surgical measures at our disposal are those the aim of which is to empty the uterus. He refers only to those which to-day are entitled to be called surgical, assuming that the tents—laminaria, sponge, tupelo—which for long constituted favorite dilating agents, have been buried with that foe of the lying-in chamber which one and all of us are endeavoring to extirpate—sepsis. In short, when the indication for emptying the uterus occurs, we should resort to the operation with every care a surgical procedure calls for, and not after the slow, bungling, dirty manner which our predecessors only used because of the lack of better knowledge.

The difficulty surrounding the application of the surgical manipulation varies *pari passu* with the stage of gestation, and proportionately, also, according to the normal or abnormal condition of the parturient tract. Similarly, the method resorted to by election will vary according to the urgency of the individual case. We must ever remember that our aim is to save the woman and the fetus, with the least risk to the woman and the least damage to the parturient tract. Fortunately, the case is not often of such an urgent character as to preclude deliberate preparatory action leading to the active measure—the emptying of the uterus. This preparatory action consists simply in utilizing means for opening the entrance into the uterus. The technique which the writer prefers—indeed, the only method which he would resort to in the non-urgent cases we are considering, because it is safe, effective, and aseptic (surgical)—is the following:

The external genitals and the vagina having been prepared after that fashion which alone is justifiable—that is to say, having been rendered aseptic—the cervical canal is dilated by steel-branched instruments or hard-rubber dilators, according to the preference of the individual, and is next packed with sterile gauze up to and within the internal os. The

upper vagina is filled firmly with gauze. Within twenty-four to thirty-six hours, under absolutely aseptic precautions, the gauze is removed. Prior to the sixth month of gestation he finds it preferable to introduce a second packing, again under absolute asepsis, for the reason that rarely at this stage of gestation has the cervix been sufficiently softened by one packing to enable the finger to be utilized in conjunction with the curette for removing the ovum or breaking up the fetus. As a rule, two packings, at 24-hour intervals, enable him to proceed to the essential step of emptying the uterus. Under the third month, at the end of this interval, in the absence of pathological change in the cervix, under anesthesia, the finger, aided by the long, dull curette, may now absolutely empty the uterus; and the author dwells on this word *absolutely*, for he does not consider the procedure properly performed unless the finger, inserted to the fundus—which is possible when the uterus is depressed by pressure through the abdomen—certifies to the fact that the organ has been completely emptied. Not that remnants will always do damage, but they *may*, and the individual can never predict the instance in which they will or will not. After the third month of gestation and up to the sixth, the procedure of emptying the uterus becomes more difficult, for the reason that dilatation of the cervix is rarely sufficient to enable us to dispense with embryotomy, sometimes made chiefly by the finger. But even though this be requisite, if the asepsis be perfect the procedure is not alone feasible, but it is safe and surgical. Better by far difficult manipulation, if such carry no risk, than awaiting the efforts of nature at emptying the uterus. These manipulations, at the stage of gestation we are considering, may be said to carry but one risk, that of hemorrhage. The simple means of forestalling this need only be mentioned—and this is the uterine tamponade.

The nearer gestation has advanced to term, the simpler—other things equal—does this preliminary dilating process become. After the seventh month, in nulliparæ as well as in multiparæ the preliminary tamponade will, after the lapse of twenty-four to thirty-six hours, enable us to proceed to the step which leads to evacuation of the uterus. The writer insists again that we are now considering instances where the symptomatology is not of that nature which tells the observer that even this space of time may not be at his disposal to forestall the appearance of eclampsia.

The step which should follow the preliminary tamponade is one which of late has been so frequently described—manual dilatation—that it is unnecessary here to describe its technique.

Assuming that care has been taken, in the preliminary tamponade, not to rupture the membranes, and that such rupture has not occurred spontaneously, version should be the operation of election. High forceps—that is to say, forceps above the pelvic brim—should never be used unless version is contra-indicated; and when forceps must be used, the sooner we accustom ourselves to the axis-traction type the better for the woman and the fetus.

The uterus emptied—a fact to be certified by the hand—the gauze tamponade is again at our disposal, should there exist inertia or should this be feared. In the event of the character of the pulse or the imminence of the symptoms calling for venesection, this uterine tamponade can be used when we think the woman has bled enough from the uterus; and herein we possess a further advantage through resort to the method outlined, since many a case of impending eclampsia, if it may be so termed, is benefited by venesection to an extent which we of this generation fail to appreciate.

The method described above is applicable, with perfect safety and within reasonable time limits, to all cases where the symptomatology admits of delay. The writer insists again that the only risk the woman is subjected to is that of septic infection, and should this occur the operator or one or another of the attendants is to blame.

In another class of cases the urgency is such that time for the preparatory tamponade is lacking. Here, provided there be no pathological alteration in the cervix and no obstruction in the lower genital canal, such as is offered by fibroids, it is usually possible, under surgical anesthesia, to empty the uterus by the method of manual dilatation alone within the space of forty-five minutes. In the meantime such remedies as the operator has faith in may be given hypodermically; and again, if the case demands it, venesection by the uterine route may be resorted to. Exactly similar aseptic precautions should accompany the manipulations, for the only risk the rapid manual method subjects the woman to is septic infection. The claims advanced that the uterus may be ruptured,

have been amply disproved by statistics, in large number, emanating from reliable men; and if it should happen that the cervix is torn, there is nothing simpler than the immediate repair of the rent; while the outcome of the emptying of the uterus, according to the demands of the case, may be the saving of woman and fetus. At any rate, in the writer's experience the alarming symptoms abate, unless the case be of that fulminant toxemic type where, so far as we are aware, neither drug nor surgery can be relied upon.

A further series of cases is offered by instances where pathological change or congenital defect prevents resort to manual dilatation without preparatory treatment, and yet the urgency is such that slow preliminary dilatation cannot for one moment be thought of. In the writer's personal experience such cases have been extremely rare—he can recall but a single instance of impending eclampsia under such conditions. And yet the reports emanating from colleagues of repute satisfy him that his fortune has not been theirs, and he feels under obligation to them for having called his attention to a step which is sometimes urgently indicated—the rapid emptying of the uterus. Duhrssen in Europe, and Edgar and Marx of New York, have specifically described the method of incision resorted to to meet this indication; their work Grandin commends, while after careful study he withdraws certain criticisms formerly offered. The only point he insists upon is that the indication for the Duhrssen incisions will rarely, very rarely, offer.

Finally, we pass to a third group of cases, where obstruction of the genital tract by tumors renders impossible resort to any and all of the methods sketched. Only in instances where the nature of the obstruction in the lower genital tract prevents recourse to manual dilatation and the Duhrssen incisions, is Cæsarean section indicated. This statement is made notwithstanding statistics, chiefly those of Halbertsma.

Such, very briefly, are the writer's present views in reference to the surgical treatment of eclampsia. He refers to them as present views, because in this changing and changeful science no man can predict to what extent change of opinion may not be forced upon him. Dogmatic statement is out of place until a science has reached the stage of exactitude. During the author's relatively short career he has found himself at times obliged in all honesty to retract statements which, when made, appeared to be in accord with established fact, even as they were in accord with observed clinical data. He bases his plea for active treatment of impending eclampsia and existing eclampsia on similarly carefully observed clinical cases, not over-large possibly, because it is not the fortune of any one man to witness the awful complication many times. He has tested every other method which has been advocated, and yet no method has yielded him such superb results as regards the saving of human life. In this progressive age we cannot afford to trust to expectancy when action has been over and again proved the safer course. And, lastly, seeing that no man can foretell when eclampsia is not going to develop, the symptoms which usually forebode it being present, it is playing the part of a fool to fold one's hands in complacency, even though drug treatment has proved futile, because in a certain proportion of cases, with the same symptomatology, the convulsion has never set in. As well might a man carry with a feeling of security a piece of dynamite in his pocket, because, forsooth, in his experience, he has never been hit there!

THE TREATMENT OF GASTRIC HYPERACIDITY BY METHYL BLUE.

BERTHIER reports that methyl blue can be used with advantage in this condition, the dose being one to three grains each day for several days. It is then discontinued for three or four days, and then used again. He claims that it abolishes the pain, re-establishes normal digestion, suppresses any tendency to vomiting, and relieves hyperesthesia of the stomach and gastralgia.—*Revue Internationale de Médecine et de Chirurgie*, April, 1896.

THE TREATMENT OF SEA-SICKNESS.

LEGRIX, of Paris, divides the treatment of sea-sickness into the preventive, the curative, and the hygienic.

The preventive treatment consists in the administration of one or two granules of strychnine arseniate, sulphate, or hypophosphite, in the dose of $\frac{1}{100}$ grain, every quarter of an hour at the beginning of the journey, until five or ten granules have been taken. The patient should also take, the evening before starting on his journey, half a grain of podophyllin, and repeat the dose every night for the first three or four days.

The curative treatment consists in the administration of the following:

℞ Arseniate of strychnine, 1-120 grain;
Hyoscyamine, 1-320 grain;
Hydrobromate of morphine, 1-60 grain.
To be taken every fifteen minutes, for an hour or two.

The hygienic treatment consists in the horizontal position, fresh air, and acidulous drinks.

In the case of young children, brucine is substituted for the strychnine, and the dose given every half-hour; the hyoscyamine is given three or four times only in the twenty-four hours; while the morphine is not used at all. Calomel is substituted for podophyllin.—*Journal de Médecine de Paris*, April 19, 1896.

IODIDE-OF-MERCURY HÆMOL IN SYPHILIS.

DIXONMANN (*Medical Chronicle*, February, 1896) says that hæmol is an organic compound of iron obtained from blood, and has been combined with several of the heavy metals by Kobert, of Dorpat, at whose request the author made a clinical trial of iodide-of-mercury hæmol. It is given in two- to three-grain pills three times a day, and possesses the great advantage that it can be taken for a considerable period without causing salivation, and is especially useful for anemic persons requiring mercury. A trial of it was made in cases of squamous and papular syphilides, syphilitic iritis, and two cases of primary syphilis. The iodide probably aids the mercury in its action on skin diseases, and when the squamous stage is reached iodide-of-mercury hæmol appears to act more quickly than blue pill or pil. hydrarg. subchlorid.—*British Medical Journal*, June 27, 1896.

TREATMENT OF RINGWORM OF THE SCALP.

In *Pediatrics*, August 15, 1896, ALLEN of New York contributes a practical paper with this title. As he points out, the form of local treatment to be adopted varies somewhat according as the ringworm is disseminated or diffuse, *i.e.* in one or more large patches, or perhaps occurring in numerous small spots.

In any event the hair is cut short with barber's shears, or the scalp is shaved. This is necessary for girls as well as boys in institution life, since it not only facilitates treatment but permits of the necessary observation and oversight. The scalp is then best washed with bichloride, and, if open wounds are absent, a solution of 1 part bichloride, 100 parts alcohol, and 500 parts water, can be employed.

Most of the remedies recommended are parasiticides, and many contain mercury in one form or another. One which the writer has found to act well at the Randall's Island Infant Asylum, has the following composition:

℞ Hydrarg. bichloridi, gr. x;
Balsam. Peru, ʒ iij;
Olei lavandulæ, ʒ j;
Spt. vini rectificat., ad ℥ j.

This can be applied to a patch of limited extent only.

Another, which is almost always of marked benefit for a time, is composed of:

℞ Sulphur, ℥ j;
Hydrarg. ammon., ʒ iv;
Balsam. Peru, ʒ iij;
Lanolin,
Vaselin, of each, ℥ ij.

Care must necessarily be exercised in the use of any of these stronger mercurial preparations.

A non-mercurial solution which the writer introduced at the institution with which he is connected, and which had the effect of clearing the surface rapidly of evidences of the disease, was composed of:

Menthol,
Thymol, of each, gr. x;
Chloroform, ♏ xxx;
Water, ℥ j.

Another was:

℞ Hydrarg. nitratis,
Ichthyol, of each, ʒ j;
Collodion, ℥ j.

Or,

Thymol, 2 parts;
Chloroform, 8 parts;
Ol. oliv., 24 parts.

as proposed by Morris.

Another plan, somewhat employed, was to cover the scalp with a sufficiently large piece of spread mercurial plaster.

After securing a certain amount of irritation by these means, it is better to withhold entirely such strong remedies and resort for a season to the blandest topics until the inflammation has subsided. Then the same—or, often better, another equally powerful—parasiticide remedy is to be reapplied. After various attempts with various methods, naturally used in connection with strict cleanliness, the hair being made short by cutting or shaving, shampooings, antiseptic washes, etc., the writer has come to the conclusion—

reached by a number of other observers—that chrysarobin is to-day the best drug at our command for securing an efficient and prompt effect. It has its disadvantages, which are well known. It is uncleanly, both for the patient and for bed linen and clothing. It is liable to produce dermatitis and staining of the skin, and if care is not exercised it may affect the eyes disagreeably. Still it is the best drug we possess, and in employing it recently in about ninety cases the author was enabled to obviate most of the disagreeable effects by exercising due care, first in its application, and secondly in preventing its being spread to other parts by the patients themselves through inadvertent rubbing. There are various ways of minimizing this latter disadvantage by caoutchouc and other caps or head-dressings, and the suggestion has been made to fasten such a cap securely over the forehead by means of a rubber or adhesive bandage, and only raise it from behind to make applications of subsequent dressings. Although the author's patients wore caps chiefly to protect the pillows, he incorporated the drug in collodion, thirty to sixty grains to the ounce, and this was painted on over the shaven scalp wherever patches of disease were to be seen, and renewed as often as it became loosened or detached. Perhaps the action is somewhat slower than that of ointment, but the benefit of shutting off the air, partially at least, from the diseased areas by the collodion was believed to be of decided benefit in itself, because of the well known aërobic nature of the fungus. The writer believes that occlusion has much to do with the success of any plan. This is chiefly effected by certain pomades and plasters, but not so fully as by the collodion occlusive dressing.

Should these cases be epilated? Yes, if it can be done with proper skill, care, and intelligence, and especially if the cases are few and the patches small; but to start in to epilate several hundred children in whom the disease has manifested itself and secured the upper hand, so to speak, the persons charged with the epilation being the ordinary hospital or asylum attendants, is a task much worse than useless.

To become a skillful operator, the nurse must be of more than average intelligence and must be especially instructed in the work, so that new foci of disease are not established by the process. In most institutions the safest plan is probably to cut the hair regularly, say once each week, with barber's shears kept well sharpened and constantly disinfected either by sterilization or by soaking in antiseptic solutions. Clippers should not be used—for, although they may with care be kept clean, the probabilities are that they will not be. It is probable that the disease has often been spread in asylums and schools by the use of this instrument, which has been forbidden in the public institutions in France. Some cases are perhaps better treated if regularly shaved every week, but close clipping usually answers every purpose, and the irritation of the hair-root is not so marked.

AN ALTERATIVE PRESCRIPTION.

The *Journal des Praticiens* of April 18, 1896, recommends the following:

℞ Iodide of potassium, 30 grains;
Tincture of iodine and tannin, 15 minims;
Tincture of cinchona, 2 drachms;
Syrup of orange, ½ ounce.

This may be given to the patient in the course of twenty-four hours.

THE CAUSE AND TREATMENT OF INFANTILE ECZEMA.

In the *American Medico-Surgical Bulletin* of August 1, 1896, ALGER concludes an article on this subject by the statement that in treating a case of infantile eczema, the search for the cause should go hand in hand with the treatment, which is otherwise only palliative. Always find how the child is fed; if nursed, how often; and whether it vomits or has gaseous eructations. Look for any change in the mother's habits just previous to the outbreak, which might have had an influence on the milk: possibly she has begun to menstruate, or some nervous or sexual trouble has affected it. If necessary, get a specimen of the milk and find out what is wanting or what is in excess. If the child is fed on cow's milk, be sure that it is properly diluted in proportion to the child's age; that it is properly sterilized and made neutral or alkaline before using. See that all utensils are kept clean, especially the rubber nipples and connections. If condensed milk is used, stop it entirely or get a brand without sugar. If prepared foods are used, get the formula and make a careful study of that particular child's needs. Above all, don't allow any child to have tea or coffee, and do not permit any child under a year to be fed from the family table.

Now for the internal remedies. In an acute eczema of a few days' standing you

can sometimes obtain a decided amelioration of symptoms by a brisk cathartic, calomel preferred: it stimulates glandular action, eliminates excrementitious products, and by starting an inflammatory action here the congestion of the skin may be greatly lessened. The ordinary rhubarb and soda sometimes serves very well, unloading the intestines, stimulating secretions, and neutralizing acidity. Generally with a little aid the stomach will correct itself in a short time if only proper food be introduced. Perhaps a little pepsin for a few days may be of use, or a diet of peptonized milk. Some cases are benefited by judicious use of cod-liver oil and iron. Arsenic is generally contra-indicated. Weaning a child because of an intractable eczema should be kept as a last resort, owing to the undoubted risk to the child. But a long-continued eczema, by lowering the vitality of the skin, may be the cause of much annoyance in later years.

The local treatment, when only palliative, is very important for the comfort of the patient and family. The conditions we have to meet are: inflammatory action, parasitic infection, and pronounced itching. The crusts can be very easily removed by salicylated oil, rendering the skin itself accessible. Washing with water should be strictly interdicted, oil being used as a substitute. We can now treat the local conditions very happily by Lassar's paste:

℞ Zinc. oxid.,
Pulv. amyli, of each, 2 drachms;
Petrolatum, ½ ounce.

This is a paste through which the copious exudation can percolate freely; it is somewhat antipruritic, and a good base for other ingredients. In acute cases we add to it boric acid, ten to twenty grains to the ounce, or in less acute cases salicylic acid, ten grains to the ounce, which is protective and decidedly antiseptic and antipruritic. We can add ichthyol, five- to ten-per-cent., in the older cases, where the skin is thickened and scaling is excessive. Ichthyol, being a stimulant to the skin, can also be used in a ten-per-cent. aqueous solution, being especially valuable in papular eczema.

In all cases the application should be changed two or three times daily, every precaution being taken to see that the skin is kept covered and scratching prevented. For the face and scalp the ointments can be spread on cheesecloth, and kept in place by a bandage, or by a mask cut to fit the child and pinned or tied behind the head.

EXPERIENCE IN THE TREATMENT OF TINEA TONSURANS, WITH ESPECIAL REFERENCE TO ACETICUM GLACIALE.

Of interest in connection with the article upon Ringworm by Dr. Allen, published in this issue of the GAZETTE, is that of Dr. SHEFFIELD upon the same topic published in the *American Medico-Surgical Bulletin* of September 5, 1896. He says truly that the difficulty of effecting a cure in chronic ringworm of the scalp is well appreciated by the medical profession. While it need not be doubted that some dermatologists have been successful in curing this disease in a comparatively short time, the average duration of it is generally accepted to be six to twelve months. Its tedious course is due mainly to auto-infection of other parts of the scalp from the primary eruptions, and also to the fact that most of the efficacious remedies employed, being too irritating, are, on this account, often discontinued, especially in private practice, before a cure has been accomplished; for, while it is essential, for the successful remedying of the case in question, that the drugs applied penetrate the scalp deeply through the epidermis, so as to destroy the trichophyton fungus, the inflammation or poisoning which may follow a continuous, vigorous treatment should not be lost sight of.

During an epidemic of ringworm of the scalp at the Hebrew Sheltering Guardian Society Orphan Asylum, which was recently reported to the daily press by his predecessor, Sheffield had the opportunity to ascertain the value of various well recognized parasiticides, such as carbolic acid, bichloride of mercury, chrysarobin, etc. None of the drugs employed proved efficacious in eradicating the epidemic, while chrysarobin, which was given four months' trial, added to the evil by setting up a suppurative inflammation of the scalp and face in about twenty per cent. of the cases, and acute conjunctivitis in more than half of them; so that on assuming charge of the institution, he still found 369 cases of ringworm of the scalp (diagnosed microscopically as well as clinically), and six new cases appeared shortly after.

Considering the situation, which, if much longer continued, would have resulted in the ultimate ruin of the institution, Sheffield decided to combat the enemy with other drugs not yet employed in this epidemic. After testing at one time several remedies,

he found the following combination most reliable, curing all the cases in about four weeks:

Acidi carbol.,
Olei petrolei crudi, of each, ℥ ij;
Tr. iodini,
Olei ricini, of each, ℥ iiiss;
Olei rusci (German), q. s. ad O j.

M. Sig: Apply over entire scalp once a day for four successive days: wash off thoroughly with green soap on the sixth day; then clip the hair close to the scalp, and wash again as before.

Repeat this course of treatment regularly for three successive weeks.

At the end of the month, careful microscopical examination of the greater number of the cases no longer revealed the presence of the trichophyton fungus. To relieve the slight eczematous eruption which was still present, Sheffield ordered the application, once a day, of the following mixture:

Resorcini,
Acidi salicylici, of each, ʒ iv;
Alcoholis, f ℥ iv;
Olei ricini, q. s. ad O j.

To be well rubbed into the scalp.

After about two weeks the hair on the bald spots commenced to grow, and no relapse of the disease has since set in.

This mode of treatment is especially advantageous in epidemics, for the following reasons:

1. The cure is speedy, with but little inflammation.

2. It can be easily and rapidly applied. This is of special value where many cases are to be dealt with.

3. The mixture being thickly applied excludes the air, thus retarding the propagation of the parasite—making, by the way, caoutchouc caps unnecessary, which is well worthy of consideration from a pecuniary standpoint.

4. It lessens the liability of auto-infection, by keeping the scales and broken-down hair closely adherent to the primarily affected spots.

A remedy which, in Sheffield's experience, has proved of almost specific effect in the destruction of the trichophyton fungus, is glacial acetic acid. He tested it in eight acute sporadic cases of ringworm of the scalp. After clipping the hair close to the scalp, the affected spots were touched with the acid, by means of a cotton swab, once every third day, making in all three applications. Care was exercised to prevent the acid reaching the healthy parts. Two days after the third application the scalp was washed with green soap and covered with a sulphur ointment (one drachm to the ounce) after the hair had been clipped again.

As a precautionary measure in the prevention of relapse, which is so liable to occur in these cases, Sheffield always advises, in addition to scrupulous cleanliness, the use of the resorcin mixture for a few weeks after the ringworm has been cured.

In cases where isolation is impracticable (as often happens in private practice), the resorcin mixture is a good substitute for it; for it was found that when superficially applied to the healthy heads of the children brought in contact with the ringworm cases, they remained entirely free from infection.

Having thus obtained such excellent results in the treatment of tinea tonsurans with milder remedies, it would seem questionable whether we are justified in applying corrosive sublimate or chrysarobin in such strengths as to produce poisoning or suppurative inflammation of the scalp, face, and eyes, with the dictum in view that the end sanctions the means.

HISTORY AND NAMES OF RHAMNUS PURSHIANA (CASCARA SAGRADA).

In a paper contributed to *New Preparations*, October 15, 1877, page 8, the late Dr. J. H. Bundy, an Eclectic physician of Colusa, Cal., recommended cascara sagrada as a valuable remedy in the treatment of constipation. This notice was by means of a brief note that was part of a paper on Berberis Aquifolium, Dr. Bundy promising, however, to give it further attention, as follows: "It is not my purpose to treat on cascara sagrada in this paper; but, using it in connection with the berberis, I simply make mention of it. In the future I will introduce this drug to the profession."

This, so far as the writer can determine, was the first reference concerning this remedy in pharmaceutical or medical print. Agreeably to promise, in January, 1878, Dr. Bundy contributed a paper on the subject of Cascara Sagrada, in which he gave the uses of the fluid extract. Following this came many papers from Dr. Bundy and other physicians, twenty contributions on the subject being printed in *New Preparations*, 1878, to which journal, with few exceptions, the subject was confined during 1877 and 1878. Dr. Bundy stated in his paper (1878) that: "A description of the cascara I am unable to give at this time; but suffice it to say that it is a

shrub, and in due time its botanical name will be known." He neglected, however, to concern himself further in the matter.

In the fall of 1878, Dr. C. H. Adair, of Colusa, Cal., a partner of Dr. Bundy, sent the writer specimens of the bark and botanical specimens of the tree yielding it. These, on identification by Mr. Curtis G. Lloyd, proved to be *Rhamnus Purshiana*. This fact was announced in a paper on "Some Specimens of Western Plants," presented at the meeting of the American Pharmaceutical Association held in Atlanta, Ga., November, 1878 (Proceedings, 1879, page 707), and completed the drug's history.

Dr. Bundy supplied the drug under the Spanish name, cascara sagrada, which name is said to have been in local use throughout some sections of California, and soon came to be the common name of the drug. It will surely dominate all others as long as the drug is in use. The Anglicized name, sacred bark, has also been applied to the drug, and the Scriptural term, Chittim bark, was also employed in early days in some parts of California; but these names are now obsolete.

To Dr. J. H. Bundy, Colusa, Cal., (1877) is due the credit of introducing the bark of *Rhamnus Purshiana* (cascara sagrada) to the medical profession.

To *New Preparations*, Parke, Davis & Co., of Detroit, Mich., (1877 and 1878) is due the credit of bringing the drug to the attention of physicians and pharmacists.

To Parke, Davis & Co., of Detroit, Mich., (1878) is due the credit of making the first pharmaceutical preparation (the fluid extract), and of bringing this preparation into general conspicuity through their advertisements and business connections. It may be said, without danger of controversy, that this firm introduced and established cascara sagrada as a remedy.

To Dr. C. H. Adair (1878), of Colusa, Cal., is due the credit of furnishing the botanical specimens that established the drug's botanical position.—LLOYD, in *American Journal of Pharmacy* for September, 1896.

INDICATIONS FOR NEPHRECTOMY.

KUESTER (*Berliner Klin. Woch.*, May 11, 1896) restricts this operation to the following conditions: 1. Tumors of the kidney. 2. Tuberculosis of the kidney. Experience has shown that renal tuberculosis occurs very often primarily and unilaterally; it affects the genitals and the lower urinary passages more frequently than other parts of the body. Severe persistent catarrh of the bladder is one of the first symptoms; in cases of this kind nephrectomy gives excellent results, and complete recovery ensues. 3. Suppurating kidney caused by metastatic processes and foreign bodies, especially calculi. 4. Renal hemophilia. 5. Movable kidney. 6. Injury to the kidney. 7. Calculous disease of the kidney. 8. Uretero-abdominal fistula.—*British Medical Journal*, June 6, 1896.

SURGERY OF THE SPINE.

PARONA (*Il Policlinico*, May 1, 1896) reports four cases of spinal affection. The first was one of long-continued dorsal neuralgia affecting the seventh and eighth dorsal nerves on the left side. None of the usual remedies did any good, but injections of potassium iodide deep into the situation of the nerve-roots cured permanently after eight injections. Fifteen grains were given on alternate days, and improvement was noticed after the third injection. There was some reason to suppose that the case was rheumatic.

The second case was one of persistent troublesome neuralgia affecting the seventh and eighth pair of dorsal nerves, and probably due to a fractured spinal process (eighth dorsal) twenty years before. The injured spine was exposed: no bony pressure was found. The author, therefore, thoroughly stretched the nerves near their exit from the vertebral foramen, and so freed them from the old thickening. The result was permanent and speedy cure of the neuralgia.

The two other cases were each tuberculous in nature, and consisted of caries of the transverse process and body of the third and fourth dorsal vertebræ, accompanied by mediastinal abscess. The abscess cavity was freely exposed and drained from behind, and the patients recovered locally, but one died a few months after from pulmonary phthisis (of which there was no sign at the time of operation), and the other showed signs of phthisis. Both patients were adults, and there was no deformity of the spine. Mediastinal abscess was suspected, from the fact that when the external abscess was completely aspirated it almost immediately filled again, the quantity of fluid extracted being out of proportion to the volume of the visible swelling, and the abundance and flow of the discharge through the fistula being manifestly affected by the coughing of the patient—*British Medical Journal*, June 6, 1896.

PRACTICAL AIDS IN THE DIAGNOSIS OF PERICARDIAL EFFUSIONS, IN CONNECTION WITH THE QUESTION OF SURGICAL TREATMENT.

Pathologists are well aware of how often pericarditis with effusion is not recognized clinically. Osler says, in his Practice of Medicine, that probably no serious disease is so frequently overlooked by the practitioner. The prognosis in extensive purulent effusion is grave. Medical treatment is practically of little avail, and the results of paracentesis of the pericardium have so far been rather disappointing. An early and radical operation ought to increase the percentage of recoveries. A necessary prerequisite for operative treatment is a reliable diagnosis. EWART, the well known writer on physical diagnosis, summarizes in a timely article numerous practical points to aid one in the diagnosis of pericardial effusion, especially when this is large enough to raise the question as to surgical interference.

This author, stimulated by an early mistake, worked out for himself a complete method of physical examination, the underlying principles in which are accurate percussion and palpation, and careful auscultation. Under separate headings he gives the following signs, some of which are new:

1. Considerable extension of the lateral boundaries of the total area of dullness. Careful percussion will guard against the mistake of narrowing the outline of the sac on account of the superficial resonance of the borders of the lung, which overlap the sac instead of coinciding with its lateral boundaries.

2. Great extension of absolute dullness; the sternum absolutely dull. This sign is not absolutely diagnostic, because it may be due to a number of conditions that will separate the two upper lobes of the lungs, such as a much enlarged heart, aneurism, mediastinal tumors, etc.

3. The depression of the liver. In no other condition except in pneumothorax and in thoracic sarcoma is the hepatic depression so marked, at least in the middle line, as in large effusions into the pericardium. The hepatic percussion note may begin at the level of the tip of the xiphoid instead of at the infra-sternal notch.

4. Dullness in the right fifth intercartilaginous space (Rotch's sign). As a result of pericardial effusion within the right corner of the sac, the usually resonant area in question may become dull on percussion. Ewart regards this sign as possibly present in certain cases of enormous dilatation of the right auricle from tricuspid stenosis, and hence not sufficient to supply the diagnostic verdict.

5. The diagnosis between pericardial effusion and cardiac dilatation. The lower angle of the pericardial dullness projects to the right. Normally the right auricular border is convex—it retires downward and inward toward the xiphoid. The outline of an effusion of fluid spreads out at the base; its lowermost angle projects outward. "From a surgical standpoint the practical importance of this sign, which seems to be the only one establishing a diagnosis between pericardial effusion and cardiac dilatation, lies in the fact that aspiration of a dilated right auricle has been repeatedly recorded." A faithful mapping out of the right border of dullness is necessary.

6. The lower left angle of dullness; the relation of the apex beat to this angle. In cardiac enlargement or displacement the apex beats at the extreme left limit of the dullness and at its lowest level. Not so in pericardial effusion: the apex will beat somewhat inside and above the boundaries of dullness.

7. The first rib sign. In all cases of considerable pericardial effusion it was possible to feel the upper edge of the first rib; this means a rising up of the clavicle. This condition also occurs in some cases of dilatation of the heart. It can be easily studied without disturbing the patient.

8. The posterior pericardial patch of dullness. Whenever fluid accumulates in the pericadium, the resonance at the left posterior base is modified in a most definite manner. A patch of marked dullness is found at the left inner base, extending from the spine for varying distances outward. When all the signs in front support the diagnosis of effusion, the presence of this posterior patch of dullness furnishes a complete and crucial evidence of fluid.

9. Tubular breathing below the right mamma. This sign is not constant, but should be looked for in severe cases.

10. The posterior patch of tubular breathing and egophony. "Immediately below or slightly to the left of the tip of the left scapula a patch of about two inches in diameter presents well marked tubular breathing and egophony." This is confirmatory of other signs. It is generally present.

11. The secondary pleural effusions belong to the later stages of pericardial effusion, and their diagnostic value is therefore diminished.

12. The large and slapping pulse of pericardial effusions. The peculiarity of the pulse is its great size and velocity of impact, and the sudden collapse of the wave.

It will be seen that Ewart has supplied some novel available signs, which, in conjunction with others commonly described, may facilitate the diagnosis. He cautions against the expectation of finding the classical account of the disease directly and wholly applicable to individual cases. Irregular cases of pericarditis are common and of special importance to the surgeon.—*Journal of the American Medical Association*, April 11, 1896.

TREATMENT OF ENTERO-VESICAL FISTULA DUE TO TYPHLITIS.

JERVELL (quoted in *Centralblatt für Chir.*, No. 25, 1896) treated a girl of seventeen who gave a history of having had several attacks of appendicitis and who suffered for several years from cystitis. In the urine were found the husks of oatmeal which had been taken by the mouth. A thickened area was found on the right side of the bladder, and the cystoscope showed a projection corresponding to this area, resembling a mass of granulations. Laparotomy showed that the vermiform appendix was adherent to the right bladder-wall. The vesical and cecal ends of the appendix were tied, the parts between resected, and both stumps invaginated. The patient recovered promptly, and the cystitis was cured.

GANGRENE COMPLICATING TYPHOID FEVER.

KEEN (*Medical News*, July 18, 1896), in the Shattuck Lecture, states the cause of typhoid gangrene as obstruction of the circulation. This obstruction presents as: (1) arterial emboli of cardiac origin; (2) arterial thrombosis arising in the vessel itself; (3) venous thrombosis of the same order; and (4) thrombi in the peripheral vessels. As the circulation is not so completely cut off in venous as in arterial thrombosis, gangrene is not so likely to result from the former. In both varieties, but particularly in the arterial form, the clots are often discontinuous. Occasionally venous thrombosis is followed by sudden death. Both forms are apt to give rise to a symmetrical gangrene which closely resembles Raynaud's disease.

Toward the end of the fever or early in convalescence, a sudden, severe and persistent pain is felt either at the seat of the gangrene or in the obstructed part radiating to the periphery. Following this there is coldness, numbness, discoloration, and other usual evidences of gangrene. The pulsation of the affected vessel near the gangrenous area is quite feeble, and near the obstructed portion the vessel feels like a cord. When the primary obstruction is in the vein, and is extensive, it is very apt to be symmetrical.

In his Toner lecture, Keen reported 113 cases of gangrene. To this he now adds 90, or a total of 203 reported cases in fifty years.

Age had but little influence on gangrene in connection with typhoid fever, but not so with sex, for, out of 155 cases, 90 were males and 65 females.

In 214 cases in which the location of the gangrene was studied, in 146 it was in the lower extremities and genitals, and in 16 in such peripheral distributions of the vascular system as the ears and nose. Gangrene due to venous thrombosis is most commonly found in the lower extremities.

Of 41 arterial cases, 18 occurred in the third week; of 107 venous cases, 40 occurred in the third week—in other words, 58, or 39.2 per cent., developed in the second or third week.

Just as in gangrene from other causes—often of non-bacterial origin—the legs suffer more than the other parts of the body; but of 46 cases of arterial gangrene, 8 involved both sides, 19 the right side, and the same number the left side. On the other hand, in the venous cases both sides were affected in only 4 instances, the right in 10, and the left in 38. Keen thinks the left side is more often affected, because the left common iliac vein is subjected to compression as it passes under the right common iliac artery.

Gangrene of the genitals is more common in older subjects.

The most important treatment is that of prevention—*e.g.*, the securing of good food and air, aiding the flagging heart by alcohol, and stimulating the peripheral circulation by faradization. In giving baths, great care should be taken to avoid bruising the body or limbs.

When gangrene is actually present, the important thing is to keep the parts clean by the application of an antiseptic dressing. In

gangrene of the head and neck, operative interference is, of course, limited to the removal of the gangrenous tissue. Where amputation is demanded, it should not be done until a final line of demarcation has formed. The leg should be emptied of blood by elevating it, but the elastic bandage should not be employed, since by its compression an already existing thrombus might be broken up or septic matter forced into the general circulation. Owing to obstruction to the circulation, the bleeding will naturally be less than usual, but it should be constantly borne in mind that such patients have not one drop of blood to lose. The surgeon should not delay amputation long after the line of demarcation has formed.

The body should be carefully examined, epecially those parts of it which experience has shown are most likely to be attacked, pre-eminently the lower extremities and the genitals. The arms, neck, and head, being exposed, are much more likely to attract attention should they be attacked by gangrene than those parts which are covered by the bed-clothes.

Chapman's ice and hot-water bags, alternate heat and cold, with very moderate friction and stimulating liniments, should be advised; and the use of the constant current as a means of stimulating the collateral circulation, in the deep as well as the superficial parts, will be of service. If gangrene is not only threatened, but actually sets in, the gangrenous parts should be kept as aseptic as possible by the free use of antiseptic dressings.

Minute attention should be directed to cleanliness, particularly in parts of the body soiled by urine, feces, or the menstrual discharge. Detergent washes and stimulating douches, the keeping of the rectum free from accumulated feces, and thorough and free incision of abscesses in the vicinity of the anus, are to be especially commended.

In the extremities, if amputation is necessary, the time when it shall be done depends largely upon whether the gangrene arises from distinct obstruction by a palpable thrombus or embolism, or whether it arises in the peripheral vessels without such an appreciable mechanical obstruction of the main vessels. In the latter case the line of demarcation is usually established pretty early and the disease is generally unlikely to advance beyond this line. Amputation, therefore, should be done as soon as the line of demarcation is well pronounced, and it may be done but little above this line, since there is no obstruction in the vessels higher up which would threaten the integrity of the flaps.

In the cases where a distinct thrombus or an embolus has formed, however, the obstruction is very apt to extend farther and farther, as time goes on, by secondary thrombosis. At what level, therefore, will occur the limit between the tissues that must necessarily die and those in which nature can still keep up a healthy life, cannot be stated definitely until the line of demarcation is well established. But the facts obtained by the study of Keen's two series of cases aid very distinctly in this study. When the clot extends only up to the popliteal, the leg may escape gangrene altogether; and should it follow, the author has found it limited, in twenty-one cases, to the foot six times, to the lower half of the leg once, and to the upper calf in fourteen cases. When the clot extended into the femoral, the gangrene extended to the upper calf in eleven and to the thigh in eight cases. When the clot extended above Poupart's ligament, the gangrene in fifteen cases was limited to the foot in one, the calf in eight, and extended above the knee in six. Amputation in these cases, therefore, should not be done, as a rule, until a well defined and probably final line of demarcation has been formed.

Quervain's method of operating is both ingenious and useful. After forming an interior flap, and before making the posterior flap containing the vessels of the lower thigh, he disarticulated only the bones at the knee-joint, dissected the femur loose for twelve centimeters above the joint, and divided the bone, then exposed the vessels and ligated them, and last of all formed his posterior flap. The wisdom of ligating the artery before dividing it was shown by the fact that in the amputated part it was found to be filled with a loose clot, which would almost certainly have been dislodged by the manipulation if the flap had been made prior to ligation, and so have caused considerable hemorrhage. Such patients have not a drop of blood to spare.

As a general rule, therefore, we should wait for the line of demarcation, but the operation should not be deferred long after its appearance. If danger of septic infection or speedy exhaustion should appear, immediate amputation at or above the probable limitation of the disease should be done. The extension of the disease, if the femoral be free, will not be, in the majority of cases, above

the tubercle of the tibia. If the femoral be involved, necessitating an amputation of the thigh, the resources and the safety of modern antiseptic surgery would lead us in general to amputate, but in some cases it may be a serious question whether expectant treatment and a relatively long-subsequent amputation might not be less dangerous than an earlier operation.

THE LEWASCHEW METHOD OF SUBSTITUTING SALT SOLUTION FOR THE EFFUSION OF PLEURISY.

This method was first announced at the Berlin International Congress, but further success with it leads LEWASCHEW to recommend it in still stronger terms, as he has now a record of fifty-two cases, all followed by marked relief and prompt recovery. Thoracocentesis is first performed, and as the effusion is gradually aspirated it is replaced by physiologic salt solution, which prevents the collapse of the organs into the empty pleura, while the solution is gradually absorbed and exerts a general tonic and local antiseptic effect. The *Therapeutische Medicinische Wochenschrift* of June 28, 1896, devotes ten pages to a complete *résumé* of the results and technique of this treatment.—*Journal of the American Medical Association*, July 25, 1896.

ACUTE RETRO-PHARYNGEAL ABSCESS.

KOPLIK (*New York Medical Journal*, April 4, 1896), in an interesting study of this subject, states that the anatomical investigations of Gillette have shown that there are behind the pharynx lymph nodes and a lymphatic system, as we should expect in the tissue between the pharynx and the vertebral column, and that there is an intimate relation between this system of lymph nodes and those of the tonsils at the angle of the jaw and of the deep structures of the neck; consequently, infection of the tonsils or soft palate, the gums, or the lymph glands of the neck, will involve the retro-pharyngeal lymph nodes by sympathy. The writer of this paper, in his article upon lacunar diphtheria of the tonsils, and also in previous articles upon angina of a non-membranous or evanescent type, demonstrated the presence of streptococci in the depths of the tonsillar lacunæ. An angina, ever so slight, may harbor enough material to start a retro-pharyngeal infection.

We must conclude, from a study of the bacteriology of the subject, that the abscess in these cases is of a purely acute pyogenic nature, unconnected with any previously existing tuberculous diathesis or affection of the lymph nodes or the bones of the spinal column. Apart from those cases which complicate the infantile sepsis or scarlet fever, we must conclude also that the abscess is a benign disease, and its tendency is, when aided artificially by treatment, toward rapid recovery.

The writer's experience includes seventy-seven cases of retro-pharyngeal abscess. A study of this list of cases drawn from a large clinical material—infants and children below ten years of age—shows that the acute retro-pharyngeal abscess is pre-eminently a disease of infancy: 4 aged one to three months, 10 aged three to six months, 41 aged six to twelve months, 10 aged a year to a year and a half, 5 aged a year and a half to two years 2 aged three years, 2 aged five years, 1 aged six years, 1 aged seven years, 1 aged nine years. One infant was aged one month, and two were of the tender age of two months.

It will be seen from these data, which the author considers sufficient for statistical purposes, that retro-pharyngeal absoess is most frequent from the sixth to the twelfth month of infancy, and not so common below the third month. Most of the cases occur in infants below the twelfth month, and the next period of frequency is from the twelfth to the eighteenth month. Above the second year of life the retro-pharyngeal abscess is quite uncommon. It is therefore *par excellence* a disease of the first two years of life, and most frequent during the period of suckling.

The diagnosis is not difficult if one has met a few cases; the symptoms are striking and not to be mistaken, yet we can readily see how they might be mistaken for acute laryngeal disease or diphtheritic paralysis of the fauces. In a great number of infants not in any way suffering from retro-pharyngeal abscess or disease behind the pharynx, if the fauces are inspected while the head of the infant is thrown back, a distinct apparent prominence is seen in the fauces to one or the other side, caused by an anomalous development and prominence of the vertebral bodies in this region. The only true way to settle the point is to carefully explore the walls of the pharynx with the index finger, and see if this prominence is not simply normal to the particular infant. The writer has frequently been able to correct a mistake in this way. And here it may be said that digital exploration of the fauces of an infant is

not a procedure devoid of danger. A small and tapering finger is a fortunate possession in these cases. Rough manipulation with a large finger seems to have eventuated, in cases that the writer has met with, in a subsequent condition of prostration of the infant, not relieved by operation and evacuation of the abscess.

In exploring the fauces we must have in mind several conditions which may either accompany or simulate retro-pharyngeal abscess. There may be a retro-pharyngeal adenitis in which simply enlargement of the retro-pharyngeal lymph nodes has occurred, due to either pyogenic infection or tuberculous or syphilitic disease, but in which no suppuration has taken place. Koplik has never seen a case in which syphilis could enter as a causative factor, but he has met with a few cases in which there was a retro-pharyngeal adenitis. The enlarged node was hard and did not present any signs of suppuration. We should recognize these cases, as an operation on such nodes is extremely unsatisfactory and affords no relief. The hard swelling persists. A corollary to this is that, even in acute pyogenic retro-pharyngeal abscess, the diagnosis is not necessarily to be immediately followed by operation.

Sometimes the abscess is so low down, opposite the larynx, as not to be visible through the opening in the fauces; in these cases digital exploration alone can fix the location and diagnosis. An abscess should not be ruptured by the examining finger, for then, the whole fauces being occupied, pus is apt to flow into the larynx. Severe pressure should be absolutely avoided.

Before considering the complications of acute retro-pharyngeal abscess it is well to consider what happens if the affection is left to nature. In observed cases, if the abscess was purely retro-pharyngeal, and did not involve too many of the deep lymph nodes, it spontaneously discharged its contents, and cure resulted. Suffocation by spontaneous evacuation can result only when the abscess is of enormous size, occupying the fauces fully, and when it discharges all the contents at once. The danger of a sudden spontaneous rupture of these abscesses has been much exaggerated; though exceptionally, as in Bokai's case, death has resulted from bursting of the abscess during sleep, the pus having been aspirated into the larynx.

There are a set of cases of retro-pharyngeal abscess in which symptoms of asphyxia set in, and, in spite of incision of the visible portion of the pharyngeal tumor, prostration and symptoms of pressure on the larynx continue, and the infant seems in imminent danger of death. Bokai records one such instance (in an experience of fully three hundred cases), in which, after incision of the abscess, tracheotomy was resorted to, with relief and ultimate recovery of the patient. In the writer's seventy-seven cases one such case occurred, in which the infant was operated upon outside the clinic and brought to the clinic in a moribund condition by the much-frightened physician. Here not only were there symptoms of extreme collapse, but all over the chest could be heard loud moist râles. It was surmised that the infant might have inspired some of the contents of the abscess. Inasmuch as the air seemed to enter the lung freely, tracheotomy was not resorted to. The infant died.

In another case laryngeal spasm is recorded, and in one there is a record of complicating basilar meningitis. In another case diphtheria caused death, and in still another "aspiration" pneumonia. Platot and Variot lately recorded the death of an infant suffering from a retro-pharyngeal abscess, at the moment of incision; death did not occur from invasion of the air-passages with pus, but from "reflex syncope." These cases form a very trying percentage of all retro-pharyngeal abscesses. An incision is made, but the symptoms remain unrelieved, and the prostration of the infant not only continues but increases. Reflex syncope has been offered as an explanation. Pressure on the important nerves, the sympathetic and pneumogastric, by the manipulating fingers in the neck, has been thought to cause this peculiar condition of prostration, referred to once before in this paper. Yet another explanation is that the abscess burrows and is not drained by the high cut; this, combined with the effects following operative manipulations, only increases the symptom-complex, to the great danger of the little patients. Bokai records one case of a burrowing retro-pharyngeal abscess which caused death by hemorrhage from its opening into a large blood-vessel.

In spite of all that has been said of the complication, the writer asserts that the prognosis of the uncomplicated retro-pharyngeal abscess, if treated by timely interference, is exceedingly good. Most of the cases end in recovery. Of Bokai Sr.'s 179 patients, only six died; and of Bokai Jr.'s 138, only eight died—4.4 per cent.

One would suppose that in a disease in

which the gross lesion was always in sight and easily located, the treatment would be immediately plain and apparent, yet in no disease is this less so than in acute retro-pharyngeal abscess. Some (Bokai) advocate the internal incision in all cases, and others, who seem to have equally good results, advocate the external incision (Burkhardt). Bokai Jr., of 138 cases, operated in 106 from within and in 10 externally; while Burkhardt, with a very limited experience, advocates external incision in all cases, for the reason that if we incise through the mouth it is difficult to keep the abscesses open or to treat them antiseptically; he thinks that if an anesthetic can be given it is desirable, and that external incision allows of exploration of the abscess. Meyer advocates the method of Burkhardt, and has employed it in four cases. He especially advocates it in tuberculous cases.

A good, free, longitudinal internal incision, subsequently enlarged with a forceps guided by the finger, rarely closes up. There are cases requiring reincision, but these are not common.

As to antisepsis, more than seventy per cent. of these abscesses occur in infants at the breast; the food is fluid; there are few teeth, sometimes none; and the demands for antiseptic treatment of what is primarily an infectious abscess are less than would be the case in the adult subject.

As to the technique of operation: The infant, having been freed from all articles of dress, is held in the lap of an assistant in such a manner as to face the light. The head is held firmly by a second assistant. The operator, standing in front of the patient, depresses the tongue firmly with a depressor, exposing the abscess. A bistoury, with the blade covered by rubber plaster, leaving only half an inch of the point exposed, is inserted into the abscess, and an incision made running longitudinally from above downward, inclining, if at all, toward the median line. The assistant is instructed to hold the infant forward, face down, quickly, as the abscess is incised, so that the pus may escape from the mouth. By exerting gentle pressure at the side of the neck this is facilitated. Sometimes a blunt-headed dressing forceps, guided by the finger, may be inserted at the point of incision, and the opening carefully dilated to allow complete escape of the contents.

After the operation the infant is put to the breast; the process of suction seems to favor drainage. Pressure for drainage can more effectually be exerted externally from the side of the neck than from the inside.

In some cases incision of the main tumor does not relieve the patient; here we may have a second collection of pus lower down, opposite the cricoid cartilage, and this also has to be evacuated before allowing the patient to withdraw from observation. These cases may be suspected if, after the primary incision, the breathing and voice do not immediately improve. In all such cases a search should be made for other collections of pus.

When the deep cervical glands at the side of the neck are involved, with the primary abscess behind the pharynx, and extensive external swelling, the abscess is more safely approached from without, by careful incision of the overlying tissues. These cases, however, are exceptional.

INTRA-CRANIAL COMPLICATIONS OF MIDDLE-EAR DISEASE.

LICHTENBERG (*Wiener Med. Presse*, May 10, 1896) relates the following interesting case as an example of the deceptive character of the symptoms and physical signs in many cases of intra-cranial affections complicating middle-ear disease. The patient was a boy aged fifteen; his illness began with pain in the left ear, which began to discharge pus nine days later. A fortnight after this a red tender swelling appeared behind the ear, and was associated with throbbing headache on the affected side; pressure on the tragus caused giddiness. A week later he had a rigor, and was seen by Lichtenberg; till now treatment had been only by insufflation and lavage of the ear. On examination the temperature was 102° and the pulse 140; the left ear was red, and the external meatus full of creamy pus. After washing out, there was vigorous pulsation of a small perforation in the upper posterior quadrant; the tympanic membrane was injected, and there was a bright red bulging forward of the upper pole. On catheterization a perforation sound was heard with very few and slight râles. Although the signs appeared to point to accumulation of pus in the tympanic cavity, blowing through revealed that it was almost empty; this was taken to point to another source for the matter, and it was observed that the mastoid region was sore and red right away to the occipital bone. The case appeared to be a typical one of mastoid empyema, and Lichtenberg prepared to operate,

but next day the rigor, fever, headache and mastoid tenderness had disappeared, the patient feeling so much better that the other members of the staff considered operation inadvisable, one of them expressing an opinion that the pus retention was in the attic and not in the mastoid at all. Lichtenberg held that the improvement was fallacious, but restricted the operation to dividing the whole posterior half of the membrane—a procedure which caused the escape of a considerable quantity of blood, but no pus. During the next fourteen days the patient's condition was most deceptive; the symptoms flickered from day to day, and sometimes the patient felt in perfect health for days together. The redness and soreness of the mastoid region came and went; all that was constant was the objective appearance of the auditory cavity. At the end of this time, however, the symptoms reappeared, with the addition of a fluctuating retro-auricular swelling; this was cut down upon, and an empyema of the antrum with caries of the lateral sulcus discovered. Thorough removal of the disease resulted in the complete recovery of the patient.

Lichtenberg (following Schwartze) considers that when the antrum is filled with pus under pressure its opening becomes patent, and the pus overflows, thus leading to an alternate improvement and relapse; he holds that the presence of visible pus in the ear with absence of râles on catheterization is in many cases pathognomonic of mastoid empyema.—*British Medical Journal*, July 4, 1896.

POST-OPERATIVE INTESTINAL OBSTRUCTION.

BOISE (*Medical News*, July 18, 1896) states that post-operative intestinal obstruction is due to tonic muscular spasm, to true intestinal paralysis, to the formation of new adhesions, or to pre-existing constriction not discovered or relieved at the time of operation. In considering the question of tonic muscular spasm, he says that after all serious abdominal operations, especially when complicated by adhesions necessitating more or less violence to the intestines, there is irregular, painful peristalsis during the first twenty-four hours or more. It is then that tonic spasmodic contraction of the intestinal muscles occurs. This occurs oftener than is recognized. In support of this view, he mentions two cases reported by Dr. Ashton, where autopsy revealed this condition. Another case was reported to him by Dr. O. E. Herrick, of obstruction following laparotomy, which resisted all measures to provoke a fecal movement, or even the escape of flatus, till finally, in desperation, a quantity of tobacco smoke was thrown into the rectum. In a very short time free fecal evacuations occurred.

In the writer's practice, after a laparotomy for the removal of pus-tubes, efforts to produce catharsis resulted only in the production of nausea and vomiting, which rapidly became fecal. There was only moderate abdominal distention. The pulse and temperature did not indicate sepsis, and yet the most faithful and persistent effort failed to even provoke an escape of flatus. To give the patient temporary relief from the persistent vomiting, he gave a large hypodermic injection of morphine. Within half an hour her bowels moved copiously.

The condition in these cases was tonic obstructive spasm of the intestines, aggravated by injudicious treatment. The indication in such cases is to cause relaxation of the spasm, and thus relieve the obstruction. For this purpose no drug is equal to opium in some form, preferably codeine because of its freedom from nauseating tendencies. There are those who, in the strongest possible terms, condemn the use of an opiate after abdominal section, but the writer contends that by the free use of codeine during the twenty-four or thirty-six hours immediately following an abdominal operation the best interests of the patient are conserved. It not only relieves the pain (often severe), but by its sedative action on the sympathetic nervous system allays irritation and converts irregular spasmodic intestinal contraction into normal, painless, though active, peristalsis. He always uses it freely in this manner, and has never had occasion to regret doing so. Under its use normal peristalsis, as evidenced by the escape of flatus, is more quickly established, and instead of delaying catharsis it makes it more easily possible.

The very early use of cathartics in cases of spasmodic abdominal pain after section, the author cannot sanction. This pain is caused by irregular obstructive intestinal contractions, and the use of a cathartic before normal peristalsis has been restored aggravates the existing irritation. Sedatives are indicated. The condition is parallel to that existing in lead-colic, where no remedy will overcome the existing constipation and promote an evacuation of the bowels as readily or cer-

tainly as opium freely used; or to those cases cited by Brunton, of obstinate constipation complicating ovarian neuralgia, where opium not only relieved the neuralgia but produced catharsis.

It may be urged that the use of codeine after abdominal section will tend to promote the formation of adhesions by preventing persistalsis, but the writer does not think so. The conditions are abnormal. It must be remembered that the intestines are no longer quiet. In addition to the stimulus of irritated nerves, there is the normal stimulus of gas in the intestinal canal. The intestines are no longer empty and flattened, as at the beginning of the operation, but by the processes incident to the operation there has been a formation of more or less gas, supplying a normal stimulus to peristalsis within the canal itself. Moreover, the peristalsis is not normal or regular. It is more or less spasmodic, even obstructive. Codeine, properly used, instead of quieting normal peristalsis and allowing adhesions to form, quiets excessive peristalsis, regulates the action of the intestines, and renders the production of catharsis possible at an earlier period than by any other means. He believes that in serious abdominal operations the exhibition of cathartics by the stomach should be avoided till it is shown by the escape of flatus that normal peristalsis has been re-established, but that we should rely on the free use of codeine, supplemented, if necessary, by high enemata.

If, after judicious trial of the measures above detailed, the symptoms of obstruction persist, the abdomen should be reopened and the cause of the obstruction sought. Nor should we hesitate to incise the intestines, if necessary, to reduce their volume. For organic obstruction there is no other remedy.

TREATMENT OF OSTEOMALACIA.

RITCHIE (*Edinburgh Medical Journal*, June, 1896) gives the following *résumé* of the surgical treatment of osteomalacia:

The present surgical method of treatment has been gradually evolved out of the results of operation at full term when a deformed pelvis prevented natural delivery. The first recorded case in which an osteomalacic pelvis was a hindrance to delivery is stated to have been by W. Cooper, in a letter to William Hunter in 1776. The first Cæsarean section in a case of this disease was by Stein, Sr., in 1783. Von Winckel, Sr., before 1861, performed Cæsarean section thirteen times for osteomalacia, with a result favorable to the mother on six occasions. Von Späth and Von Braun removed the uterus and ovaries expressly for the cure of this disease, but both cases ended fatally. Fochier (Lyons) in 1879, and Levy (Copenhagen) in 1880, expressed their opinion that the removal of uterus and ovaries would be a suitable operation. Kleinwächter and Saenger had recoveries from osteomalacia after having performed Porro's operation, and believed the benefit resulted from removal of the ovaries. Reference has already been made to a case in which Underhill performed Porro's operation for rupture of the uterus; cure of the osteomalacia resulted. Fehling enumerates twenty-four cases in which, up to 1888, Porro's operation had been performed for the cure of this malady, with successful results. In 1886 he thought the benefit was due to the removal of the ovaries, and in January 1887 he performed his first double oöphorectomy for the cure of the disease; also twice early in 1888. At the Gynecological Congress in Halle in 1888 he said that in such cases when other methods of treatment had failed, if the patients had already several children and were unfit for work, he would remove the ovaries alone. Accordingly, on the 9th of July of that year, in such a case he performed a double oöphorectomy for the cure of osteomalacia, and a second one shortly afterwards. Since that time he has removed the ovaries from several non puerperal women for the cure of the disease.

This operation has become an acknowledged method of treatment. Few cases have been recorded in this country, but Rasch, in March 1892, treated a woman, aged forty-one, in whom the disease began in 1890 after her third confinement. After a new conception in October, 1891, she grew rapidly worse, and in the succeeding March Rasch induced abortion; eight weeks later, as there was no improvement, he removed the ovaries, and recovery followed. Von Winckel, in May 1893, published a paper in which he recorded forty cases of removal of the ovaries alone; of these he had followed sixteen for a long enough period to be sure of the result—in twelve he was able to record a cure, and in four improvement. He points out that the operation cannot be said to have a definite and certain result. Truzzi, in 1894, recorded in a tabular form the particulars of ninety-eight operations, on ninety-seven patients, for the cure of osteomalacia: in eighty-two

of these the ovaries alone were removed, in eight there was in addition ventro-fixation of the uterus for retroflexion, in one the tubes also were removed because of pyosalpinx, and in six the uterus also was removed. Of these, the ultimate result was learned in only fifty-two, as follows: Complete cure, 36; almost complete cure, 4; cure consecutive to relapse, 3; improvement, 3; persistent relapse, 5; no change, 1.

Truzzi questions whether, since recovery has in several cases not followed removal of the ovaries, it might not be better to remove also the uterus. He believes that a more profound and extensive mutilation of the sexual apparatus will have a more considerable influence on the disease. In one of his patients, after double oöphorectomy, relapse occurred; fifteen months later he removed the uterus, and very marked benefit resulted. But it must be remembered that there have been failures after removal of the uterus as well as ovaries; Chrobak, Neumann and Beaucamp record such cases. Chrobak's case was afterwards cured by the internal administration of phosphorus. Von Späth performed Porro's operation, but left the ovaries, in a woman aged seventy; she completely recovered. It must, however, be borne in mind that after removal of the uterus the ovaries quickly atrophy.

In 1889 Baumann collected statistics of forty-four cases in which Porro's operation had been performed for the cure of osteomalacia; eighteen died from the results of the operation, three died later from other diseases, two could not be traced, seventeen recovered, and in four there was improvement in symptoms. Seeligmann gives the death-rate after Porro as thirty to thirty-six per cent., after oöphorectomy five per cent. Harris has collected statistics relating to 500 cases of various diseases in which Porro's operation has been performed since 1876: in the first hundred cases the mortality was sixty per cent., but in the last hundred only fourteen, and of these fourteen five were ill with fever before the operation. He also gives the mortality in different countries, varying from 64.4 per cent. in France to 22.1 per cent. in Austria. Some operators have had extraordinary success.

It has been claimed that the curative results in relation to osteomalacia are more favorable after Porro than after oöphorectomy. Statistics do not bear out this statement; and when, even with improved methods, we note the much lower mortality after oöphorectomy, it is evident that the introduction of the latter operation by Fehling as a curative measure is a distinct advance. In fifteen cases Cæsarean section alone was performed, but the curative results in relation to osteomalacia were not so good as after Porro; in nearly all of the cases there were relapses, especially with the recurrence of pregnancy. If Cæsarean section be performed, the ovaries should be removed in order to prevent the recurrence of pregnancy.

Dümmock performed symphysiotomy on a Hindoo woman to permit of delivery, and she completely recovered from her osteomalacia.

A very interesting case by Seeligmann is worthy of note in relation to treatment. The case was a severe one. The woman had lost very much in height. Six days after having performed a Porro, and while the bones were still soft, he applied extension, with a wonderful result in the increase in height. After seven years of bed-ridden life, with severe pain and great deformity, the patient recovered the power of walking and of attending to her household duties.

If we sum up the foregoing experiences, it would appear:

1. That in non-pregnant women and in men a sufficient number of cases of recovery after internal treatment has been recorded to warrant its being tried, provided the case is not very advanced. The methods of medicinal treatment which have proved most successful are: favorable hygienic conditions, good food, phosphorus internally, bone marrow, and salt baths. It should also be remembered that there have been a few cases of favorable result after chloroform narcosis. Psychological changes have been reported in some women after removal of the ovaries; therefore that kind of treatment should not be recommended until other remedial measures have been fairly tried, but both in medicine and in surgery the weal of the patient occasionally demands that we choose the less of two evils; therefore—

2. If these fail, or if the case be advanced with considerable deformity, then oöphorectomy should be performed without delay in order that bone changes and deformities may, if possible, be prevented. At the same time it might be well to bear in mind Lödlein's view, that oöphorectomy does not directly cure, but is a substantial aid in that direction; therefore cases should be kept under observation for some time after operation.

3. In pregnant women having such a contraction of the pelvis that the birth of a

viable child is impossible, operation must be performed sooner or later. It has been much discussed whether abortion should be induced and at a later date the ovaries removed; or whether, if the disease be not progressing rapidly, it would not be better to wait till term and then operate, either by Cæsarean section and removal of the ovaries, or by a modified Porro. Velits advises Cæsarean section and removal of the ovaries, but several others, among them Neumann and Chrobak, advise the removal of the ovaries and uterus after the method adopted by Chrobak.

If the disease is progressing rapidly, operation should be undertaken without delay.

After operation, one of the striking features is the rapid disappearance of pain—pain which was elicited by pressure on the bones, and which was so greatly aggravated by movement. The absence of this pain renders it possible for the patient to undertake movements hitherto avoided, but in advanced cases the recovery of complete control of the muscles is slow, seeing that in them the want of power arises in some measure from the approximation of the origins and insertions of the muscles. In the majority of cases there is no return of menstrual flow after the removal of ovaries; it recurs more frequently in cases in which the operation has been done for fibroma than for osteomalacia. Of fourteen cases in which Fehling performed double oöphorectomy for osteomalacia, there was a slight discharge on four occasions, and in one only a copious flow. Among seventy-eight cases collected by Truzzi, in seven there was pseudo-menstruation.

TREATMENT OF RECENT SYPHILIS WITH SERUM DERIVED FROM SYPHILITICS IN THE TERTIARY STAGE OF THE DISEASE.

BOECK (*Archiv für Dermat. und Syphilog.*, July 3, 1896), since November of 1894, has treated seven patients by injections of the hydrocele fluid drawn from a man in the sixth year of syphilis. This fluid was filtered before being injected. He was astonished at the results. The first case received in all 6½ drachms of the serum. Eight days before the time the secondaries should have developed, the injections were begun, a drachm being employed every second day. The large chancres and the marked swelling of the glands disappeared promptly. Although the exanthema appeared after the regular time, it was very slight and lasted only a few weeks. There were no eruptions of the mouth or mucous membrane. The second case was given serum injection sixty days after infection; from fifteen to sixty minims were employed at a time; in two months all secondary symptoms had disappeared. Similar improvement was noted in all the cases.

He holds that the effect of this treatment is observed in the quick disappearance of the primary symptom, the abortion or marked amelioration of all secondary symptoms, and the improvement in general condition. The treatment is potent in proportion to the promptness with which the injections are begun. Tertiary serum has proven to be more efficacious than the secondary. The serum treatment is not as prompt and evident in its effects as iodides and mercury, but it is more rational.

A NEW OPERATION FOR THE RADICAL CURE OF INGUINAL HERNIA.

VAUGHAN (*Journal of the American Medical Association*, July 25, 1896) advocates the following operation:

1. Make an incision over the inguinal canal from the internal abdominal ring to the centre of the symphysis pubis, through the skin and fascia; then split the fibres of the aponeurosis of the external oblique, exposing the cord and hernial sac.

2. Separate the sac from the cord, ligate or sew across well within the internal ring, and cut off the redundant part.

3. Divide the conjoined tendon through its muscular part, four or five centimeters above its insertion, including the internal pillar of the ring, down to the peritoneum, avoiding the deep epigastric artery. Separate by blunt dissection the conjoined tendon from the rectus and pyramidalis muscles, down to the pubic bone, and place the cord in this position between the conjoined tendon and the rectus. The cord still passes through an oblique canal at its anterior portion, as the conjoined tendon overlaps the rectus and pyramidalis for 2½ centimeters or more, being inserted in front of these muscles. Unite the divided ends of the conjoined tendon and of the internal pillar with mattress sutures, and accurately approximate them with continuous or interrupted sutures.

4. Close the old inguinal canal with interrupted sutures, uniting Poupart's ligament to the conjoined tendon, and in the outer part including the transversalis fascia over the cord. Two or three of these sutures are

passed through the conjoined tendon to include the edge of the rectus.

5. Unite the superficial structures with a continuous suture and the skin with a subcuticular suture.

Kangaroo tendon is the best suture material. The cord is placed next the peritoneum, and brought obliquely through the abdominal wall at the strongest point. This operation is more difficult and requires rather more time in its performance than that of Bassini. The author has performed it only five times, but so far as known the results are all that could be desired. One patient was seen five months after the operation; he had been at work and was then in good condition. The others have not been heard from, though they were requested to write in case of relapse.

BACTERIO-THERAPY OF MALIGNANT NEOPLASMS.

GLUECKSMANN, in the *Münchener Medicinische Wochenschrift*, 1896, No. 5, writing from the Surgical Division of the Karl-Olga Hospital at Stuttgart, says that, in contradistinction to many of the bacteriological methods now extensively employed in therapy, the experiments regarding malignant neoplasms were based on practical observations and experience. In 1866, Busch saw a case of multiple sarcoma of the skin which healed spontaneously after intercurrent erysipelas. Biedert in 1868 reported a similar fact in the case of an enormous round-celled sarcoma of the buccal cavity, nares, and fauces. Later there were more reports of cases of a similar nature, especially one by Bruns in 1868, in which he gave his observations concerning a melanotic sarcoma of the breast; and more recently Coley and Czerny, as well as other observers, have seen sarcomatous neoplasms disappear spontaneously after erysipelas.

In order to make use of these practical experiences, three different methods have been employed:

First, Fehleisen (the discoverer of the streptococcus of erysipelas), in 1883, by artificially producing real erysipelas, simply copied nature in her curative efforts. His seven cases, four sarcomas and three carcinomas, all showed improvement, one sarcoma being completely reabsorbed. Fehleisen fully appreciated the danger of this infective method. The cases of other authors (Janicke, 1884, and Feilchenfeld, 1888), in which the "curative" erysipelas was the direct cause of death, illustrated this danger. Nevertheless, the successes were such that Bruns declared that the artificial production of erysipelas was fully justified as a last resort in desperate cases of inoperable tumors.

The second method of treatment is by intoxication. Lassar, in 1891, for the first time, treated a lupus carcinoma with products derived by filtration of streptococci cultures that had been killed by heat. He was unable to show any favorable results. In 1892, Spronk treated eight sarcomas and seventeen carcinomas, at the Pasteur Institute, with a preparation made by filtration from a mixture of dead and living streptococci. His sarcoma cases were influenced favorably, but he had to admit the lack of permanency of success and the inefficiency of the preparation after the patients had become accustomed to it. The greatest technical development has been given to this method by the work of Coley, who has traversed the entire field of observation, from the spontaneous cure of sarcoma by intercurrent erysipelas to the method of infection and of intoxication. He recognized the difference in effect of a filtrate carefully freed from bacterial bodies, and the incomparably stronger sterilized preparation obtained by heating the cultures. He took advantage of Roger's discovery concerning the increased virulence of the culture when combined with the *Bacillus prodigiosus*. Coley adopted parenchymatous injections, which, according to Thiersch, had already been tried with various other reagents, especially nitrate of silver 1:4000 to 1:1000. His observations are by far the most extensive yet published: thirty-eight cases of sarcoma and nineteen of carcinoma. He has had nine complete cures, with no recurrences during a period of eight months.

In Germany the intoxication method, as developed by Coley, has been used by Friedrich, at Thiersch's clinic, on a number of cases — thirteen carcinomas and four sarcomas; no definite results were obtained. While Friedrich did not present any new phases in his work, it is nevertheless of considerable importance, as it helped to make the method known in Germany, since the results of his investigations are reported in a most conscientious and exhaustive way, and the method has received an impetus through his paper at the Surgical Congress. At this Congress (while Lauenstein's experiment had remained unsuccessful) Kocher reported a very great reduction in the size of an enormous recurrent sarcoma of the pelvis while

under Coley's method of treatment, but the decrease in size was only temporary, as the patient had a recurrence.

Esmarch's statement, that in all the instances of the successful treatment of apparently malignant tumors by the bacteriotherapeutic measures the growths must be considered as syphilitic in origin, and not sarcomatous, demands attention.

In spite of the rather discouraging results reported by Friedrich, further experiments with the Coley method must be undertaken when a man like Czerny reports the cure of a case of sarcoma of the parotid by this method. Further reports, for and against the method, have been made by American physicians.

Within a year, attempts have been made also to cure malignant tumors by erysipelas serum. Emmerich tried to combat malignant neoplasms by injecting the blood-serum of sheep that had had erysipelas. He called his preparation "cancer serum," which name he tried to justify in a pamphlet published in combination with Scholl, covering six cases of carcinoma, of which one had to be dismissed as incurable, another for extraneous reasons, while the remaining four showed improvement under the treatment. (Coley had also tried the serum method, without definite results. He then prepared a "mixed serum" by simultaneous inoculation of streptococci and the *Bacillus prodigiosus*. As to the efficacy of this, however, he is not yet prepared to say anything definite.) Recently, Emmerich and Zimmermann published a paper regarding four cases that were favorably influenced by the serum. This latter publication describes a new modification of the method; especially favorable results are said to have been obtained by the inoculation of living erysipelas cocci after previous serum treatment. Perhaps this modification implies a practical progress. However, Emmerich makes no claim to originality, and simply returns to Fehleisen's method of infection. In 1891–2 Coley treated ten cases of inoperable malignant tumors with repeated injections of living cultures of erysipelas streptococci.

Having thus briefly given the bacteriotherapy of malignant neoplasms, a few remarks may be permissible with reference to the manner in which these endeavors, which arise from a purely empirical basis, may be reconciled to the general pathological views of the present time.

The histological results principally establish the existence of an inflammatory process in the tumor itself, in the case of artificial as well as spontaneous erysipelas, and also in case of treatment with erysipelas derivatives. From this it would seem that, as far as malignant neoplasms are concerned, the curative factors are to be found in the natural reaction (the general, febrile, and the local inflammatory reaction caused by the erysipelas) of the organism. Of course, not every inflammation has this effect upon malignant new formations, and we must consider it a specific peculiarity of the erysipelatous inflammation, based on the well known pathological fact that various causes of inflammation will produce different results.

This conclusion explains all the observations that have been made, and makes further scientific research along these lines possible, without forcing us to state any binding conditions with reference to the much contested nature and etiology of malignant tumors. It represents the therapeutic actions that have been observed as to the purely accidental consequences of an inflammatory process that has taken place in accordance with generally accepted pathological laws. It excludes any premeditated endeavor on the part of the erysipelas to injure the tumor. Nature has, in fact, no such intention, for frequently the erysipelas may, on the contrary, produce an enormous enlargement of the tumor. This is shown by the cases cited.

This theory, therefore, cuts loose from every principle of purpose or intention in the inflammation. It even permits of an explanation of the florid recurrences so often noticed in cases that have been improving in the beginning. The present theory places the local action upon the tumor in the foreground, thus giving an explanation of the frequent observation that all metastases that are remote from the tumor continue to grow steadily, while a tumor under erysipelas inflammation melts away, so to speak.—*American Medico-Surgical Bulletin*, June 6, 1896.

TRANSFUSION OF SALINE FLUID INTO THE AXILLARY CELLULAR TISSUE IN CASES OF SEVERE HEMORRHAGE.

ARTHUR H. DODD (*The Lancet*, June 27, 1896) states that the instrument used is a very slight modification of Mr. Arbuthnot Lane's transfusion apparatus, made by Messrs. Down Brothers, the only difference being that a sharp-pointed needle of a little stouter

make is required instead of the blunt one used for introduction into a vein, and the ordinary saline solution is used—*i. e.*, a teaspoonful of common salt to the pint of boiled water cooled down to the proper temperature (100° F.). Having fitted the needle, tube, and syringe together, fill the latter with the solution, then force the steel point of the needle through the skin of the axilla deep enough to move freely into the cellular tissue, and slowly and gently force the fluid into the cellular tissue. Refill the syringe and proceed again until a pint or more has been used. The following are brief notes of a successful case in his own practice:

In February last he was sent for, one evening about 7 o'clock, to attend a multipara, as the nurse was alarmed at the excessive hemorrhage which had taken place during the preceding two hours without apparently any progress being made in the labor. He found the patient had lost an enormous quantity of blood and was in a dangerous condition, being blanched and pulseless, and the pains which had been going on regularly for several hours previously had now entirely left her. He ruptured the membranes, a large quantity of liquor amnii escaping, and found that the cause of the hemorrhage was right partial placenta prævia. The patient was in an exceedingly critical condition, vomiting, in a cold clammy perspiration, with sighing respirations, the bowels acting involuntarily; she was pulseless, semi-conscious, and apparently rapidly sinking. Two subcutaneous injections of ether were given, without the slightest improvement. Then transfusion was performed according to the above-described method, about a pint being introduced. The patient made an uninterrupted recovery, assisted by taking iron in the form of Blaud's pills for several weeks. The results of the transfusion were rapid absorption of the saline fluid (hardly any swelling remaining at the end of two hours) and decided and rapid improvement of the urgent symptoms, thus enabling the patient to take minute quantities of nourishment. The method is of ready and easy application, manageable at any time single-handed.—*The Lancet*, June 27, 1896.

GYNECOLOGICAL APPLICATIONS OF THYROIDIN.

HERTOGHE (*Rev. Med.-Chir. des Mal. des Femmes*, June 25, 1896) states that myxomatous uterine hemorrhage is immediately relieved by thyroid medication, and that the same beneficial effects follow the use of this medicament when the hemorrhage is due to long-standing endometritis or ovaritis. All menorrhagias, he says, whatever may be their origin, are favorably influenced by thyroidin, even those due to cancer being markedly reduced in three or four days of treatment. Women who are prone to abort, and in whom a too profuse menstruation is liable to carry away the fecundated ovule, are beneficently influenced by thyroid extract, since this lessens the flow and relieves congestion. In one reported case a woman who had been sterile for seven years conceived and went to full term under the influence of thyroidin. This drug is useful in the treatment of uterine myoma, of retroflexion combined with hemorrhage, and generally in all cases where it is important to lessen the volume and sensibility of the uterus. Finally, because of its specific action upon the mammary glands, this drug is of great value to women in whom lactation is imperfect.

If thyroidin is given in small doses and is carefully watched, its possibilities for harm are extremely slight. The symptoms which an overdose excites are tachycardia, arythmia, high temperature, excitation, polyuria, glycosuria, albuminuria, respiratory hurry, trembling, and exophthalmos. If these are guarded against, there is little danger of seriously or permanently affecting a patient injuriously. Since the ingestion of a thyroid gland itself is neither convenient for the patient nor readily regulated as to dose, it is desirable to order tablets each containing about a grain of the extract; four to eight of these are taken daily.

NEW METHOD OF REDUCING HERNIA.

Dr. HENRY E. STAFFORD advises a method of reducing hernia by continuous pressure. He takes an ordinary rubber bandage, 2½ inches wide and three yards long, and winds it about the scrotum (including the penis), commencing below the centre and drawing tighter at the lowest part, until all parts are covered; thus the bandage exerts a constant pressure. With each layer the bandage is drawn tighter, and usually before half of it is used up the bowel slips back and the hernia is reduced. This is not so painful as taxis, and is much more effective. The same method may be employed in reducing a prolapsed rectum.

CARDIAC SURGERY.

The remarkable case of CAPPELEN seems sufficient excuse for directing attention to some details of cardiac surgery.' In the first place it may be noted that wounds of the heart or pericardium are by no means inevitably fatal. Thus, Steudener relates a case of a man who was shot through the heart, the bullet ranging backward through the spinal cord and causing paraplegia; death occurred after fifteen weeks, evidently more from the paraplegia than from the heart-wound. In West's case a man received a stab from a shoemaker's knife; after remaining in the hospital for a month he was discharged, and died from tuberculosis four years afterward. Professor Conner, of Cincinnati, relates the case of a boy, aged fifteen years, who was shot from behind; pneumonia, endocarditis and pericarditis developed, and after thirty-one days the patient was able to walk; a valvular lesion remained as a result of the endocarditis, and death occurred three years and two months afterward. These cases were confirmed at the necropsies.

Even more remarkable are the cases reported by MM. Velpeau and Brugnoli. In the former's case a man of fifty came to the necropsy table with a history of having received a stab in the left breast from a table-knife some nine years previously. At the examination, scars were discovered both in the pericardium and in the right auricle, with adhesions between. Brugnoli records the case of a man who, after receiving a stab from a knife, was able to resume work in seventy-eight days, and lived for nineteen years; the necropsy disclosed an enlarged heart, adherent and calcareous pericardium, and old scars in the right ventricle and septum, with a split mitral valve.

The heart sometimes tolerates foreign bodies very well, and again a slight injury proves fatal. Among foreign bodies found in this organ, besides bullets and needles, which are the most common, are splinters of wood, fish-bones, etc. Even the ubiquitous hat-pin has been discovered (Langier). Bullets have been found encapsulated in the heart for many years; in the right ventricle six years (Latour); in the wall of the ventricle for twenty years (Balch); and for no less than fifty years in the pericardial sac. It must be observed in passing, however, that these were the old-fashioned round balls; few conical balls will be stopped by the heart, and still fewer, if any, of the most recent projectiles of small calibre and extreme penetration.

The extent of the wound does not seem to bear any decided relation to the duration of life, for while Steiner's experiments seem to prove that simple puncture by a needle is not very dangerous, yet several cases are on record of immediate death resulting from needle wounds, accidental, homicidal, or otherwise. Again, in the cases where recovery took place, as previously mentioned, the damage was much greater than any that could be inflicted by a needle. In Brugnoli's case the mitral valve was implicated; in Conner's case, one cusp of the aortic valve; yet the patients survived for years.

The causes of immediate death after heart injuries are either nervous or mechanical—first, by interference with the ganglia presiding over the movements of the organ; and second, by the effusion of blood into the pericardial sac, thus compressing the organ and hindering its action. For the former complication, surgery is of no avail. In the latter, however, it would seem that evacuation of the fluid or clotted blood might be followed in many cases by favorable results.

Although paracentesis of the pericardium was first proposed by Riolan over two centuries ago (1649), it was not until late in the present century that it was actually put into practice. Roberts reports over forty per cent. of recoveries after paracentesis or incision; and, bearing in mind the usually fatal ending of the affections requiring this operation, the figures are highly encouraging. Possibly these favorable results have encouraged surgeons to advocate suturing bullet and stab wounds of the pericardium and heart. Park, of Buffalo, we believe, is the latest of these.

It has remained for Cappelen to put this suggestion into practice. The patient was a man of twenty-four, who had received a stab from a knife some hours before admission. On entrance he was unconscious, and no pulse could be felt; the heart-sounds could be heard, but no impulse was perceptible. The wound was punctured, not bleeding, one centimeter long, and situated in the left fourth space parallel with the rib. After an injection of camphor the patient began to breathe and the pulse could be felt. The left side of the chest did not move. Under chloroform the wound was enlarged, and the fourth rib was resected. The left lung was compressed by an accumulation of blood in the pleural cavity, partly fluid, partly clotted. After this was evacuated, the lung expanded. The third rib was resected, and a freely bleeding

wound found in the pericardium, one centimeter long. The pericardial sac was filled with coagulated blood. After enlarging the wound in the pericardium, another one measuring one centimeter in length was found in the left ventricle, which caused the hemorrhage. This wound was sutured and an artery tied, when the bleeding ceased. The account of the operation states that the suturing was rendered extremely difficult by the rhythmic movements of the lung, which covered the field of operation and obscured it, and by the contractions of the heart, which however were quiet and regular. The suturing was accomplished by bringing the needle half-way through during a contraction, then dropping it, and after a second contraction bringing it completely through. After the operation the patient's pulse was very rapid and feeble, but improved under saline injection. The patient sank gradually, and died two and a half days later. The necropsy showed a wound of one of the large branches of the coronary artery; the wound had healed partially, but there was a beginning pericarditis and various bacteria in the exudate. While death followed, yet the fact that the patient lived for over two days, and that no operative measures could be instituted for some hours, shows that in more favorable cases recovery will follow.

Fischer's statistics prove that the most important parts of the heart functionally, the ventricles, are much more liable to wounds than the auricles: 257 wounds of the ventricles, against only 31 of the auricles, which might be expected from the smaller size and less exposed position of the latter.

The great urgency of operations in heart-wounds may preclude thorough aseptic precautions. However, in view of the foregoing facts the opinion seems warranted that "the citadel of life" itself will no longer be exempt from the incursions of the surgeons.—*Journal of the American Medical Association*, June 13, 1896.

IS SURGICAL INTERVENTION WARRANTED IN PRIMARY RENAL TUBERCULOSIS?

This question was the subject of an address delivered recently by Dr. Pousson. He first described the different methods of invasion in primary and secondary infection, as the bacilli locate in the vascular zone of the organ in the former case, and produce the phenomena of congestion, pains, and hematuria. Secondary infection attacks the zone of the pyramids; it is a mixed process starting in the bladder, and revealing its presence chiefly by suppurative lesions, or pyuria. The hematuria is often the only symptom of infection for quite a while, and he cites many cases where it persisted alone for months. Here he thinks surgical intervention is entirely uncalled for, as this form is not exposed to complications from other infections, owing to the isolated position of the organ. Only when it is accompanied by severe pains preventing rest, or excessive, weakening hematuria, which forces the hand of the surgeon, as it were, is a surgical operation legitimate and nephrectomy indicated. In all cases in which the other organs seem to be exempt, he agrees with the majority of French physicians, that local attempts to exterminate these bacilli from the system are apt to be fruitless and followed by their reappearance either at this point or elsewhere.—*Medical Record*, June 27, 1896.

STERILIZATION OF SYRINGES.

Hofmeister has found that leather, like catgut, can be effectively sterilized without the slightest injury, by soaking it in a two- to four-per-cent. solution of formalin and then boiling it. Syringes that screw together, instead of being glued or cemented, are better adapted to this method. The water in which they are placed to boil must not be hot enough to crack the glass.—*Journal of the American Medical Association*, August 1, 1896.

Reviews.

Functional Disorders of the Nervous System in Women. By T. J. McGillicuddy, A.M., M.D. Illustrated by forty-five wood engravings and two chromo-lithographic plates.
New York: William Wood & Co., 1896.

The author tells us in his Preface, what we already know, that the attention of the profession has been confined of late years too exclusively to surgical gynecology and to diseases with marked pathological changes. He therefore has written this volume with the idea of emphasizing the importance, in diagnosis and treatment, of the functional derangements of the nervous system in women which are associated with uterine and digestive disorders, and he points out that very frequently the uterine and other ailments disappear of themselves when the

general health is restored. It is seen at once that a book designed for this purpose must prove of very considerable value to the practitioner and specialist, if the author has succeeded in carrying out his ideas; and a careful examination of his pages indicates that Dr. McGillicuddy has earned the confidence of his fellow practitioners. The book is illustrated in an interesting manner, nearly all the illustrations being original, and embraces chapters upon: the Reflex Neuroses, the Cerebral Neuroses, or Psychoses, Spinal Reflex Neuroses, Cardiac Reflex Neuroses, Vascular Neuroses, Pharyngeal and Laryngeal Reflex Neuroses, Bronchial Reflex Neuroses, Gastric Reflex Neuroses, Intestinal Reflex Neuroses, the Renal Reflex Neuroses, the Vesical Reflex Neuroses. Chapters are also given upon Ophthalmic Neuroses, and Neuroses connected with the Tongue, the Ear, and the Joints. The last three chapters consider Hysteria and Hystero-epilepsy, Migraine, and General Therapeutics. This last chapter covers not less than eighty pages and is to us, naturally, the most interesting chapter in the book. Much of it is devoted to the dietetics of these cases and to the form of exercise which we should employ. Cases are also cited which give the reader an idea of the manner in which Dr. McGillicuddy would have us use drugs in the treatment of the conditions which he speaks of.

Our lack of knowledge of the pathology of functional disorders naturally prevents the author from placing much of what he says upon a strictly scientific basis, but nevertheless the book is to be welcomed as a very decided step in the right direction.

AN AMERICAN TEXT-BOOK OF PHYSIOLOGY. Edited by William H. Howell, M.D., Ph.D.
Philadelphia: W. B. Saunders, 1896.

We have already noticed from time to time various members of this so-called series of American Text-books. The present volume, edited by a very well known physiologist of the younger generation, has been contributed to by ten of the leading physiologists of the United States. Noteworthy among these, and a representative of the older teachers in the science, is Prof. H. P. Bowditch, Professor of Physiology in Harvard Medical School, who contributes part of the important chapter upon Special Sense, including Vision, while Dr. Henry Sewall of the University of Denver writes upon Hearing, Cutaneous and Muscular Sensibility, Equilibrium, Smell, and Taste.

The Introduction is written by the editor, Dr. Howell, and in this part is described the meaning of the term "physiology" and the general scope of the science as we know it to-day. Following this, Dr. Warren P. Lombard discusses the General Physiology of Nerve and Muscle; and surely no one in this country is better qualified to write an article upon this subject than Dr. Lombard, whose original work in this branch of science has attracted so much attention during the last few years. We recall the fact that, in the Physiological Laboratory in Leipsic, Lombard left behind him a reputation of having been the best student of this subject who had graced Ludwig's Laboratory for many years.

The chapters upon Secretion, the Chemistry of Digestion and Nutrition, the Movements of the Alimentary Canal, the Bladder and Ureter, and the Blood and Lymph, are written by Dr. Howell.

Dr. W. T. Porter, Assistant Professor of Physiology in Harvard, contributes the article upon the Innervation and Nutrition of the Heart and the Innervation of the Blood-vessels; while Dr. Curtis, of Columbia College, writes upon the Mechanism of the Circulation of the Blood and of the Movement of the Lymph.

The chapters upon Respiration and Animal Heat are by Dr. Reichert, who is well known for his researches upon these subjects; and that upon the Central Nervous System is by Dr. Donaldson. Dr. Frederic S. Lee, of Columbia College, writes the thirteenth chapter, upon Reproduction; while Graham Lusk, of Yale, writes the final chapter, upon the Chemistry of the Animal Body.

The characteristics of the entire volume are the copious reference which is made to the bibliography of the various subjects considered, and the large number of illustrations, which, as a rule, are exceedingly good.

Unfortunately, many physicians neglect their knowledge of physiology to such an extent that they rapidly become rusty concerning many vital points with which they were acquainted in student days, and fail to recognize that keeping in touch with the fundamental science of life will make them better practical physicians. To those whose education in this branch is lacking, or who desire to put themselves in touch with modern physiology, we can most heartily recommend this book; for, without dealing in heavy and deep problems of little interest, it considers all matters of importance in connection with physiology in an exhaustive way which

has only been equaled by that exceedingly valuable but never-translated-into-English work known as *Hermann's Physiologie.*

We think that Dr. Howell and his collaborators, and the publisher Mr. Saunders, are to be thanked for thus showing to the world the position in which physiology stands in this country to-day.

A PRACTICAL TREATISE ON MATERIA MEDICA AND THERAPEUTICS. By Roberts Bartholow, A.M., M.D., LL.D. Ninth Edition, revised and enlarged.
New York: D. Appleton & Co., 1896.

There is little for the reviewer to do but to call attention to the fact that the ninth edition of Dr. Bartholow's well known work on Therapeutics has appeared. To the great majority of the medical men in this country this work is very familiar, and almost every physician knows the arrangement of the subjects and the methods by which the learned and able author considers them. A careful examination of the pages of the ninth edition shows but little noteworthy change. All of the advantages of early editions are retained, and Dr. Bartholow has in various places modified certain statements and added others in such a way as to, in his opinion, bring the book up to the latest point in modern therapeutics. We notice that the very useful bibliographies which are appended to most of the important articles remain practically unchanged from the earlier editions, and that most of the references are to classical treatises or to communications published some years ago. We have no doubt that the present edition will prove as successful as its predecessors.

A HAND-BOOK OF PATHOLOGICAL ANATOMY AND HISTOLOGY: With an Introductory Section on Post-mortem Examinations and the Methods of Preserving and Examining Diseased Tissues. By Francis Delafield, M.D., LL.D., and T. Mitchell Prudden, M.D. Fifth Edition. Illustrated.
New York: William Wood & Co., 1896.

To those who have the pleasure of personally knowing the joint authors of this volume, and to those who are acquainted with their scientific work and ability as teachers, it is not hard to understand why their treatise should already have reached a fifth edition, for it discloses a most intimate acquaintance with the literature of the subject and practical experience in the method of imparting knowledge to students and practitioners. The directions given for the making of autopsies and the preservation of tissues for microscopic work, and the methods of study of pathogenic micro-organisms, are not cumbered by a large amount of unnecessary technicality, but are clearly set forth in a manner which almost any one with an ordinary scientific training can readily understand; and the same lucidity of description characterizes the treatment of the macroscopic and microscopic conditions of the organs that are affected by disease. We are told in the Preface that the section on the Blood has been rewritten by Dr. James Ewing, who has done such very good work in the last few years in the study of this tissue.

The colored illustrations of this volume are much better than those which are frequently found in works upon this subject, and the book will undoubtedly continue to be a popular one among teachers and students of this most important department of science.

THE READY-REFERENCE HANDBOOK OF DISEASES OF THE SKIN. By George Thomas Jackson, M.D. Illustrated. Second Edition. Revised and enlarged.
New York and Philadelphia: Lea Brothers & Co., 1896.

Four years ago we had great pleasure in reading the first edition of this useful little handbook of Dr. Jackson's, and in cordially recommending it to the readers of the THERAPEUTIC GAZETTE as a concise compendium of the subject treated. The present volume possesses all the advantages of the earlier edition, and in addition much new and valuable material. The various diseases considered are arranged alphabetically, and may therefore be readily referred to by the physician without the necessity of following any systematic nosological arrangement, such as is necessary in consulting some works in this department of medical science.

The volume closes by giving a number of formulas which are of value, and a large number of prescriptions also dot the pages of the work.

TWENTIETH CENTURY PRACTICE: An International Encyclopedia of Modern Medical Science. By Leading Authors of Europe and America. Edited by Thomas L. Stedman, M.D. In twenty volumes. Volume VIII: Diseases of the Digestive Organs.
New York: William Wood & Co., 1896.

We are told by a little slip pasted in the beginning of this volume that, owing to unforeseen difficulties, it is published before Volume VII, which, however, will be the next one presented to the subscribers. Eight authors contribute the 650 pages of text. They are: Drs. Farquhar Curtis, of New York; Max Einhorn, of New York; Reginald Fitz, of Boston; James M. French, of Cincinnati; J. Ch. Huber, of Bavaria; Werner Kümmel, of Breslau; Hans Leo, of Bonn; and Johann Mikulicz, of Breslau. From this distinguished

array of medical writers it is not hard to guess what articles have been written by each, for the name of nearly every one of them is closely associated with his particular subject. Thus, Mikulicz writes upon Diseases of the Mouth, in an article of a little over eighty pages, which is freely illustrated with many original pictures. The chapter upon Diseases of the Esophagus is by Dr. Fitz; that upon Diseases of the Stomach, by Dr. Einhorn, covers nearly 250 pages and is an exhaustive summary of what is known in regard to gastric disorders at the present time. Leo's article is upon Diseases of the Pancreas; and Curtis writes upon Diseases of the Peritoneum, including appendicitis. This last article is an exhaustive one of over a hundred pages, and is followed by a most copious bibliography. Dr. Huber writes upon Animal Parasites and the Diseases Caused by Them, and we regret to note that he has not given Dr. Leidy the credit which is due him in connection with the study of the trichina spiralis, although German and English authorities upon this subject are freely quoted. The article upon the Treatment of Diseases Caused by Animal Parasites is by Dr. French and covers but twenty pages.

We are glad to note that the index of this, the eighth, volume seems to be a little more thorough than those of the earlier ones, but there is still room for improvement in this direction.

A MANUAL OF PHARMACOLOGY AND THERAPEUTICS. By William Murrell, M.D., F.R.C.P. Revised by Frederick A. Castle, M.D.
New York: William Wood & Co., 1896.

This is a volume of a little over 500 pages, devoted to the consideration of the therapeutic efficacy of most of the common remedies employed in this country and England. The American editor has incorporated some additional matter, in brackets, with the object of making the volume more useful to American practitioners. The entire book is printed in the form of lectures, and the early chapters consist of a discussion of the Pharmacology of Inorganic Substances, Pharmacology of Synthetic Compounds, Pharmacology of Drugs of Vegetable Origin, and the various remedial measures other than drugs. After this comes the consideration of the use of Mineral Waters and their different modes of application; and finally, after 143 pages have been utilized in this manner, the consideration of the Use of Drugs is entered upon, and this naturally consumes the rest of the volume, with the exception of about 75 pages devoted to a consideration of pharmacological groups, formulas, and an index.

We have never yet seen a book, with the one exception of Kaposi on the Skin, which seemed to us a credit to its author when it consisted of contributions delivered in the form of lectures, and we think the disadvantages of this method of composition for publication are so great as to render all works of this character less valuable than the subjects under treatment deserve.

The present volume, we think, emphasizes our objection to this method of book-making; for not only is it not exhaustive, but, in addition, undignified sentences can be found throughout the volume. Many of these may be justifiable in lectures, but are certainly not pleasing when in print. Thus we are told that when chloroform is given, "a young lady who has been brought up in a country parsonage" may burst out with "a torrent of oaths that would make a London cabby turn blue with envy," and one of the reasons given for selecting chloroform over ether is that a young married woman will often prefer chloroform because she is willing to take the increased chance of a fatal termination rather than run the "risk of raving about 'dear Charley' when her husband's name is Edward." Dr. Murrell tells us that under these circumstances the lady knows best, and that he would certainly respect her wishes in the choice of an anesthetic. Of all the reasons given so far in medical literature for the choice of one anesthetic over another, this is the most extraordinary we have yet met with. The book may prove of value to the general practitioner by giving him ideas concerning the use of drugs with which he is not familiar, but as a volume for the use of the student it will, we fear, fall short of what is desirable for this class of readers. This is a matter worthy of regret, for Dr. Murrell has for many years been one of the foremost therapeutists of his day, and there is no doubt that had he addressed himself to the task of writing at first hand a work of this character he would have produced a classic.

FEEDING IN EARLY INFANCY. By Arthur V. Meigs, M.D.
Philadelphia, 1896.

The name of Dr. Meigs has been for many years associated with the careful study of the proper feeding of infants, and many physicians are to-day carrying out the methods which he has so earnestly advised in his contributions to medical literature upon this subject. In this paper Dr. Meigs reiterates

his teachings of former years, and we note with interest what he has to say in regard to the sterilization of milk either by the ordinary process or by pasteurization. He does not recommend it, but believes that, with ordinary care, milk in its natural condition is far more useful to the child.

WATER AND WATER SUPPLIES. By John C. Thresh, D.Sc., M.B., D.P.H.
London: The Rebman Publishing Co. Philadelphia: W. B. Saunders. 1896.

This is an English book, issued in this country through the agency of Mr. Saunders, in twenty-three chapters and an appendix. The subject embraces water and its composition, rain and rain-water, surface water, subsoil water, etc. To those who are particularly interested in this subject from a hygienic standpoint or in connection with official work about the supplies of cities and towns, the volume will prove interesting, but to the general practitioner it is too specialized to prove very valuable.

THE MEDICAL AND SURGICAL USES OF ELECTRICITY. By A. D. Rockwell, A.M., M.D. Illustrated with 200 engravings. New Edition.
New York: William Wood & Co., 1896.

We are told in the Preface that this book is practically the ninth edition of the celebrated work upon the medical and surgical uses of electricity written by Dr. Beard and Dr. Rockwell, but that, as Dr. Beard has been dead for many years, the present volume after all represents the views of that leader in electro-therapeutics of to-day, Dr. Rockwell. Numerous illustrations are to be found throughout the volume, scarcely a single page lacking a picture designed to elucidate the text. In all there are fifty-seven chapters, which cover 601 pages. The first of these chapters deals with electro-physics, and gives a clear description of this important subject. The next eleven chapters deal with electro-physiology in an exhaustive manner, and this difficult subject is very successfully treated. The third part, which contains no less than thirty-two chapters, deals with electro-therapeutics in general and in their special application to the various forms of disease in different portions of the body. The last part deals with electro-surgery, as Dr. Rockwell calls it, the final chapter being upon the use of Roentgen photography in the study of disease. The volume represents, probably better than any other work upon this subject, the real status of electro-therapeutics at the present day. That the author, in bringing the present edition up to date, has kept himself thoroughly in touch with medical literature, is evidenced by his frequent quotations from standard authorities and the clear ideas which he has of recent progress. To those who wish to study electro-therapeutics, no better reference book can be recommended.

A TEXT-BOOK OF HISTOLOGY, DESCRIPTIVE AND PRACTICAL. For the use of students. By Arthur Clarkson, M.B., C.M. With 174 original colored illustrations.
Philadelphia: W. B. Saunders, 1896.

This English work provides us with a good description of the microscopic appearance of the normal tissues of the body, and the colored plates with which it is decorated aid us much in the study of the text, many of them being exceedingly good. We doubt not that in England the work will prove quite popular, but in this country students have been already provided with works which are better suited to the requirements of American medical education and which will therefore not permit it to be as popular as its quality deserves. The type is unusually good, and this fact prevents an economy of space, so that the volume is quite bulky. To teachers of the subject of histology we can cordially recommend the work as a volume which their libraries ought to contain.

BRAITHWAITE'S RETROSPECT OF MEDICINE. January to June, 1896. Edited by James Braithwaite, M.D., assisted by E. F. Trevelyan, M.D., B.Sc., M.R.C.P.
London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd., 1896.

In past years we have repeatedly referred in terms of the highest praise to *Braithwaite's Retrospect*, which for so many years has been a valuable summary of medical literature. The present issue is in no way inferior to its predecessors, and we can do nothing more than heartily recommend it once again to our readers, with the assurance that it is well worth the price asked for it.

RHEUMATOID ARTHRITIS: ITS PATHOLOGY, MORBID ANATOMY, AND TREATMENT. By Gilbert A. Bannatyne, M.D. Glas., M.R.C.P. Ed.
London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd., 1896.

There is no subject in medicine which is more puzzling at the present time than the study of the pathology and causation of rheumatoid arthritis and allied conditions. This brochure is devoted to an exposition of the author's views as to the causation of this disease. He believes that rheumatoid arthritis is of distinct microbic origin and is to be separated very clearly from senile arthritis

and other forms of articular change. The volume is quite freely illustrated by original photographs, the chapters have appended to them quite exhaustive bibliographies, and the author concludes from his study that his views as to the microbic origin of the affection are quite correct. To the general practitioner the most valuable chapter in the volume will probably be that devoted to Treatment. This chapter is very full and explicit, and to us seems the most interesting and valuable part of the work.

FOOD IN HEALTH AND DISEASE. By I. Burney Yeo, M.D., F.R.C.P. Illustrated. New and Revised Edition.
New York and Philadelphia: Lea Brothers & Co., 1896.

We are told in the Preface of this revised edition that many changes have been made in its pages since the publication of the first edition in 1889, the chief additions being in the part of the book devoted to the use of food in disease. The volume is probably the best upon this subject in the English language. Those who wish to provide their patients with careful dietaries in association with their medical treatment (and who does not?) will find in this book much of very great value. At the close of the volume is an appendix giving directions as to the sterilization of milk, and another appendix contains a large number of useful and pleasant preparations of food for the sick.

A TEXT-BOOK OF DISEASES OF THE NOSE AND THROAT. By Francke Huntington Bosworth, A.B. (Cantab.), A.M., M.D. Copiously illustrated.
New York: William Wood & Co., 1896.

About four years ago we took pleasure in reviewing the second volume of Dr. Bosworth's text-book upon these subjects, that volume dealing exhaustively with diseases of the throat, and containing many citations of important cases of his own and of other authors. He tells us in the Preface to this volume, which is a little smaller than the second volume of the first edition, that he has so concentrated the information which the earlier volumes contained that there is now included in this one volume of about 850 pages all the practical information which the two contained. This has been accomplished by expunging all the cases and other material not vitally necessary for the consideration of the subjects.

What impresses us most upon reading the text of this volume is that the author does not hesitate to express his own personal views in regard to the etiology, pathology and treatment of the diseases which he discusses; and this we think adds very materially to the value of any medical work. Too often, in the endeavor to recognize the contributions of their fellow workers in a certain field, authors fail to give the reader their own personal opinion as gained from experience and from the study of contemporaneous literature; but Dr. Bosworth, while not ignoring important collateral sources of information, never leaves the reader in doubt as to his own opinion upon the subject. The fact that Dr. Bosworth has not only done a large amount of clinical work in connection with the subject on which he writes, but has also made a number of original investigations in regard to the causation and pathology of the cases treated in his daily practice, renders him able to speak with well recognized authority.

The index of the book is a good one, and is followed by a number of half-page colored plates designed to give the physician a clear idea of the steps in the various important operations upon the nose and its adjacent tissues, and upon the larynx, trachea, and adjacent cervical organs. While many of these operations, because of their severity and difficulty of performance, are far beyond the skill of the average practitioner, they will be of interest to those who feel competent to operate in such cases, and will do much towards elucidating the descriptions of the operations which are given in the text.

The first part of the volume is devoted to a study of Diseases of the Nasal Passages; the second to Diseases of the Naso-pharynx; the third to the External Surgery of the Nose, a chapter which will be of great interest to the modern surgeon, but which does not, we think, recognize sufficiently the good work which has been done in this country in this line; the fourth section deals with Diseases of the Fauces; the fifth with Diseases of the Larynx; and the sixth with the External Surgery of the Throat, the illustrations for which we have already spoken of.

There can be no other opinion but that Dr. Bosworth has prepared the standard work of America upon this important branch of special medicine.

PRACTICAL NOTES ON URINARY ANALYSIS. By William B. Canfield, A.M., M.D. Second Edition.
Detroit: George S. Davis, 1896.

This deservedly popular and cheap little manual (for it costs only 25 cents) is the best practical, brief *résumé* of the subject of which it treats with which we are acquainted, and

is written by a gentleman who, from his duties as a teacher, physician, and medical examiner for large life insurance companies, knows full well the practical needs of the doctor in his daily work. In other words, Dr. Canfield has placed upon the pages of this little book just what he has found appropriate and necessary for his own use. We find nothing in it which we can justly criticise, and much which we can most heartily commend.

With the publication of this work there is absolutely no excuse for the practicing physician to ignore the study and analysis of the renal secretion, either on the ground that he is too "strapped" for funds to buy competent works upon the subject or that he is too busy to brush up upon a topic of so much importance.

THE FEEDING AND MANAGEMENT OF AUSTRALIAN INFANTS. By Philip E. Muskett. Fourth Edition.
London, Sydney, and Melbourne: Eyre & Spottiswood, 1896.

This is a very well printed and clearly written little pocket volume of something more than 150 pages, devoted first to the food of children, and in its latter portion to the management of some of the more common ills of childhood, such as diarrhea, croup, convulsions, constipation, colic, and rickets. It closes with some very good recipes for the preparation of various nutritious articles of food suitable for children, and is a volume which we think can be safely placed in the hands of a mother, particularly if she is sensible enough to call in her physician whenever she is in doubt as to exactly how she should apply the teachings of the text.

ENCYKLOPAEDIE DER THERAPIE. Herausgegeben von Oscar Liebreich. Unter Mitwirkung von Martin Mendelsohn und Arthur Wurzburg. Erster Band; III Abtheilung.
Berlin: August Hirschwald, 1896.

We have already called attention in two previous issues of the THERAPEUTIC GAZETTE to the first and second parts of this exhaustive encyclopedia, edited by the well known pharmacologist, Professor Liebreich, of Berlin. The present volume includes subjects alphabetically arranged from Cera to Diamine, and is contributed to by a very large number of the most prominent teachers in Germany, each article being signed.

As we have stated before, quite a number of the articles do not deal with therapeutics, but with disease, and perhaps it would have been more correct to have entitled the work an Encyclopedia of Medicine, rather than of Therapeutics. It possesses, however, a very great value as a reference book, and to those who read German we can heartily recommend it.

DEFORMITIES: A Treatise on Orthopedic Surgery. Intended for practitioners and advanced students. By A. H. Tubby, M.S. Lond., F.R.C.S. Eng. Illustrated. Price, $5.50.
London and New York: Macmillan & Co., 1896.

This work is an excellent, practical, sensible digest of the knowledge of deformities held by orthopedists of to-day, and the appropriate treatment for the remedying of these conditions. It is profusely illustrated, in the main by original cuts. The first section of the work is devoted to Deformities of the Spine, including of course Pott's disease and curvature; the chapters on treatment are particularly full and valuable. The second section is devoted to Deformities of the Neck, Chest, and Upper Extremities; this, of course, includes such pathological conditions as Dupuytren's contraction, snap finger and mallet-finger. The third section is devoted to Rickets and the resulting deformities. The fourth section deals with Deformities of the Lower Extremity, not including those due to tuberculosis. The final section covers Anchylosis, Congenital Displacements, Deformities resulting from Cerebral and Spinal Paralyses, and Arthrodesis.

It seems curious that Pott's disease should have been included, and coxalgia and tubercular knee-joint troubles omitted. This, however, seems to be in consonance with the practice of English orthopedists, and should not excite criticism, but rather regret that so excellent a writer should not have taken up these important diseases.

The book is to be warmly commended, but scarcely takes rank with the best orthopedic surgeries by American authors.

Correspondence.

LONDON LETTER.

BY ST. CLAIR THOMSON, M.D., M.R.C.P., F.R.C.S.

In the obituary column of the *Lancet* of October 3 the two following notices occur next to one another:

On Sept. 23d, at Folkestone, Sir John Eric Erichsen, Bart, F.R.C.S., aged 78.

On Sept. 24th, at Cambridge, Sir George Murray Humphrey, M.D., F.R.S., Professor of Surgery in the University of Cambridge, aged 76.

So within twenty-four hours we lost two of our grand old surgeons, each of whom must have accomplished all he had set his heart on in this world. Erichsen's name is known wherever surgery is studied. By a lucky combination of circumstances he had the good fortune to be elected full surgeon to University College Hospital when only thirty-two years of age; but that he was quite equal to this greatness thrust upon him so young is shown by the fact that his classical work, The Science and Art of Surgery, was published three years later, while its author was only thirty-five. To indicate the value of this great work, it is sufficient to point out that the main form of it has been continued in the numerous editions through which it has passed, the latest one—the tenth—appearing only last year. Indeed, I believe the book is still by far the most favored with all students preparing for the higher surgical degrees. It has been translated into nearly every European language, and I have been told that it has even appeared in Chinese! I see that "in America not only has the work been printed and pirated frequently, but during the Civil War the Federal Government had a special edition published and distributed to every surgeon in the service." It is unnecessary to deal with his other work; the book made his name, and by it he will be remembered. One of his house surgeons was Sir Joseph Lister, and I have described in one of my letters the interesting ceremony which took place in London last year when Sir Eric Erichsen presented to his old interne the portrait subscribed for by the latter's pupils. Erichsen then modestly said that the position of teacher and student had long been reversed, and that he was content to sit at the feet of his old pupil and pleased to recollect that the first essays in the principles of antiseptics had been tried while Sir Joseph had been his house surgeon.

The name of "Humphrey of Cambridge"—as he was generally known—may not have traveled so far as Erichsen's, for his life's work consisted largely in creating the medical school of Cambridge. When he was elected surgeon to Addenbrooke's Hospital in that city the medical faculty only existed to examine and give diplomas; there was practically no teaching whatever. When he first went to that ancient city he was not even a graduate of its university, and for more than ten years he was engaged in general practice. In fact, he was thirty-six years of age before he could write M.D. Cantab. after his name, but then he threw himself heart and soul into making Cambridge a teaching as well as an examining university in medicine, and for twenty-seven years he was professor of anatomy there. He was so successful that in time he induced the University to establish a chair of surgery, to which his services were transferred in 1883, when he himself was sixty-three years of age. I do not happen to have the figures beside me, but I believe there are as many students dissecting to-day at Cambridge as there are in any one of the great London medical schools; when Humphrey went to Cambridge a dissecting-room did not exist, and the creation of this medical school is his best monument. He was an attractive teacher and a thoughtful writer. In his popular work on the Human Hand and Human Foot, there is much of interest which gives a charm to a subject which it would be only too easy to leave dull and dry. In it he even goes into such curious questions as the origin of the custom of wearing the wedding ring on the left hand, and also demonstrates the well known reasons for the corkscrew being invariably turned in one direction. The reformation wrought by Listerism came to him too late in life to affect him; after removal of the mamma for cancer he encouraged free suppuration, as he believed it tended to lessen the danger of recurrence! I understand that, to the last, bread poultices, setons, "pea issues" and "good port wine" were amongst his favorite remedies. But his work lay in other fields than that of the treatment of wounds, and that work he did well.

Death has been busy with our leading men. Two men who once held prominent positions on the staffs of large hospitals have recently died. Morrant Baker, at one time surgeon to St. Bartholomew's Hospital, is best known out of this country as the editor of one of the numerous editions of Kirke's Handbook of Physiology. He had just, as the French say, "*arrivé*" when he was stricken with locomotor ataxia and died at a comparatively early age. Dr. Langdon Down's name may be known to visitors to the various congresses and Association meetings held in London in recent years, for at all of them he dispensed free hospitality at his country place of Normansfield. He was physician to the London Hospital, but early directed his attention to nervous diseases, and in connection with this subject he established a private asylum, or

rather a retreat, for the feeble-minded children of the upper classes. Nothing of the sort existed at the time he started his institution, and the venture was most successful. His body was cremated at the same place and on the same day as that of the author of Trilby.

Our medical schools have reopened for the winter session, and the introductory addresses have been given. For some years past these have been going out of favor with their audience, and from what many of the readers of them have said to me I should say that they were heartily disliked by those to whom it falls in turn to deliver them. It is a difficult occasion on which to say the right thing in the right way; the audience is a mixed one, consisting of lay folk, old students who know what the stern realities of practice are, a larger number of recently fledged graduates, and more still who are just entering on their studies. What may be a novel truth to part of the audience, is a weary platitude to another section, and things are faced so much more directly nowadays that the highfalutin of a former generation is no longer tolerated. Hence the student, for whom the address was originally founded, has come to be to some extent neglected, and the occasion is now looked forward to by the press, and is seized by a number of orators, as an opportunity for the delivery of a message from the ranks of the profession to the public. This was fully taken advantage of by one lecturer to show the iniquity of the patent-drug trade; may his words go far! One lecturer congratulated his hearers on having chosen London as their teaching centre, while another showed the immense advantages of studying medicine at a provincial school. Several raised the battle cry of Defense, which is now given such a prominent place in all our collegiate and other discussions of a domestic political nature. An introductory of very general interest, and one showing wide reading in the literature of the English language, is that of Dr. Wills on "Medicine in Literature." It is published *in extenso* in the *Lancet* for October 10, and in it will be found much quaint lore together with references to our cloth, from the "Doctour of Physicke" in Chaucer's Prologue, down to the sketch of a "Doctor of the Old School" as represented in Ian Maclaren's vivid and pathetic story, Beside the Bonnie Brier Bush. Dr. Wills thinks that of all the medical men in fiction of the present century the central figure is George Eliot's Lydgate, in Middlemarch.

Mr. Jonathan Hutchinson has seized the opportunity of giving an inaugural address at the medical school at Manchester, to publish his views on "The Scope and Methods of Modern Medical Education," and if I quote parts of it it is not to agree with all. Indeed, I hope for the rising generation that amongst those responsible for the framing of schemes of medical education not many will be found to share his views when he says, "I would increase the number of examinations, and would leave the student to seek the necessary knowledge where he can best find it." Indeed, I think he lays himself a little open to the charge of self-contradiction, for while he says of the student, "let him learn as best he may," in another portion of this address he urges that our methods of clinical teaching might be very greatly improved. "We adhere far too closely," he says, "to the old custom of 'walking the hospital.' We still send our young students to helplessly walk through the wards in a hurried crowd in the wake of a popular physician, when what they really need is the quiet instruction of a medical tutor with not more than three or four patients before them. In the case of the more advanced, we neglect most grievously the advantages to be gained from the classification and grouping of cases. In no other department of education do we encounter such higgledy-piggledy confusion, such absolute contempt of order. These evils are in part unavoidable and spring from the fact that our hospitals are arranged for the sole advantage of the patients, with but little thought for the interests of the students." He goes on to say that every hospital with a school ought to have its clinical wards with a lecture theatre and a clinical museum in close proximity. Surely this is not leaving the student to "learn as best he can, only making sure in the end, by a well arranged examination, that he has got the knowledge."

The excellent remarks I have recently quoted from Mr. Pridgin Teale and others show that, in opposition to what Mr. Hutchinson suggests, we are beginning to realize that the examiner has had his day, and that it is better teaching and not more examination that is required. Some writers in England appear to think that these exacting and vigor-sapping examinations are an importation from Germany. If they had a more practical knowledge of the universities of the Fatherland they would know that, on the contrary, the examination in Germany holds a most insignificant position compared to what it does

in England; in the schools beyond the Rhine the freedom amongst teachers to treat their subjects as they like, the healthy competition between lecturers to attract students, the love of learning and science which appears to be innate in the German mind, have all combined in the happy result that there learning is sought for its own sake and not merely to "get through an exam." Of course the British plan advocated by Mr. Hutchinson, of letting the student "learn as best he can," has for one result that the observant, original and talented man learns that self-reliance and excellent common sense which are so invaluable in life; but such a man would have got on under any system, and if there is anything at all in education it should surely be provided for the student, who—we must remember—pays to be taught, and not "to learn as best he may." It is much easier, and to many minds pleasanter, to examine than to teach, but signs are not wanting that if those in authority do not reform our examinations and improve our teaching, the reformation, as in so many other cases, will come from those that are under authority.

I refer to an event which occurred lately in the University of Aberdeen. A certain professor of divinity failed to make his lectures sufficiently clear and interesting to the undergraduates, so that by the end of his third year of occupancy of the chair his class had dwindled to three; and this after a good deal of "friction" between the reverend lecturer and his pupils; the result, in brief, being that the said professor has been cashiered. Such a precedent is looked upon by certain reverend, grave, and learned seigneurs as of profound and far-reaching significance, fraught with much danger, as it gives the power to a number of young men to sit in judgment on the man placed over them. The moral they draw from this occurrence is: redoubled vigilance in the appointment to academic chairs. Personally, I am inclined to view the incident as full of promise of better things. I think that young men of the age of medical students, and of the studious and industrious class of which they are at present composed, are not only quite capable of judging who is a good lecturer, but in fact are the very best judges! Is this not admitted when it is written of some teacher that he was a great and good man because he attracted students and because his lectures were always popular? If the judgment of students is inevitably right when they acclaim a good lecturer, why should they be wrong when they turn their backs on a bad one? While quite agreeing that the incident calls for redoubled care in making appointments, I think it teaches some other and more valuable morals. One is that teaching appointments should not be made in perpetuity, but conditionally; or, if such a method of bestowing chairs would be thought to be invidious, then we may learn this lesson, viz., that as teaching is an art which is in part instinctive and in part to be learned, it should be thrown open as a career to a wider field of competitors, so that they may have opportunities of showing their teaching capacities long before the time comes for them to be even candidates for professorial chairs. This is done in Germany and Italy by giving the qualification of *privat-docent* to those who show any promise of capability and originality. The privat-docents naturally strive to make their teaching instructive and valuable, while at the same time, by researches and publications, they endeavor to win a position amongst the learned. They are thus put upon their trial, and when a chair is vacant those with whom the election lies have had every facility of seeing which amongst the privat-docents is most likely to make an attractive lecturer, and at the same time by his erudition bring further credit to the university.

To return for a moment again to Mr. Hutchinson's lecture. He suggests more than a limitation of the present devotion to exercise and amusement in the following part of his address: "No one values mental or physical health more than I do, or is more willing to accord its proper place to what is termed recreation. The student, however, who enters with proper zest into the study of climate, of topography, of botany, of geology, and of zoölogy in general, will never, under any conditions, be at a loss for motives which will take him into the fresh air and secure him bodily exercise. To such an one I would say, you may safely leave cricket, golf and football to men of less resource and of less responsible pursuits. A similar permission of abstinence I would also extend to games of cards, and even possibly to some extent to the sublime gratifications of music. The well worn aphorism which affirms the shortness of human life and the wide extension of human art remains as true as ever. It is simply the fact that we have not time for all the pleasures and duties which our lives offer or impose. It is on this plea that I venture to let you off some part of those to which I have

referred. My indulgence may possibly be received with not more gratitude than was that of a friend of mine, a rather heavy man in a general way, who was, as such men often are, fond of a joke out of season. A young man, a patient of his, complained to him of the expense of the medicines which he had prescribed. 'But,' replied my friend, 'you forget how much you save by my letting you off cigars and champagne.'"

Our silly season has not passed without its annual inky war. This year it was waged around the General Medical Council, the elections to which are just coming on. The interests at stake are too local to interest your readers, so it is enough to say that the two doughtiest champions in this wordy combat have been Mr. Brudenell Carter and Mr. Victor Horsley, the former taking up the cudgels in defense of the Council and its present style of doing business—or not doing business, according to its critics,—while Mr. Horsley represented the progressists of the young school. Mr. Carter, besides being an ophthalmic surgeon of repute, has long held the distinguished position of a leader-writer for the *Times*, chiefly on scientific subjects. His facile pen therefore gave him great advantage over his younger correspondent, whose blade, however, in this wordy duel appeared to be wielded by an arm conscious of right and justice. While, therefore, Mr. Horsley's blows came down like sledge-hammers, Mr. Carter's subtle and agile defense succeeded in generally turning the weight of the stroke. Skilled dialectician as he is, the weakness of his quarrel was shown by the evidence that he had to have recourse to such flowers of argument as the terms "balderdash," "juvenile error," "farrago of nonsense, rubbish, and falsehood," "meanness and malignancy," "coarse personalities and vulgar abuse." Another correspondent who joined in the fray said that Mr. Carter, "having failed to answer satisfactorily the questions raised, attempts, like the sepia, to cover his retreat by squirting ink at his opponents." That many more choice expressions must have been deleted by the editor's blue pencil is evident from the comment with which the *Lancet* (where this correspondence has been going on) closes the question: "This correspondence," says the editorial foot-note, "must now cease. We cannot but regret that many of the letters have contained expressions of such a bitterly personal nature. Neither the cause of medical reform nor the elucidation of the Medical Acts is furthered by accusations of mendacity and other crimes. Certain gentlemen whose letters have not been published are requested to understand that they have entirely transgressed the bounds of what we consider to be decent criticism."

The horizon is looking a little clouded for quacks in general; several convictions have lately been obtained, and further prosecutions are threatening. It is good news to read that there is an end of "Sequah, Limited." Sequah, as he called himself, was an individual who perambulated the country with a brass band, drawing teeth and selling his Prairie Flower Oil. He had the wit to float his nostrum business into a company; a first dividend of four cents per share has been paid, and any further dividend will amount to only a fraction of a penny. Surely the crop of prairie flowers has not been less than usual?

The old prejudice of sex still crops up amongst medical men. It was recently stated that in Dublin no inconvenience had followed upon the teaching of male and female medical students in the same classes. The *British Medical Journal* appeared to discredit this statement, and said "that more experience is needed before any useful opinion can be expressed on this difficult subject." The *Medical Press* asserts that, so far as Dublin is concerned, there never has been occasion for complaint either by teacher or students. If the *Journal* would like to go farther afield for its experience, it could find that in Switzerland, where I have myself been co-dressor with Russian female students, the authorities are unanimous in agreeing that, far from being an inconvenience, the presence of female students in the wards and clinics has had nothing but a good effect on all who came in contact with them.

The Jubilee of Anesthesia has almost escaped notice. The *Lancet* gave one leading article to the event, the *British Medical Journal* dedicated a leading article and three editorials to it, and the *Practitioner* devoted an entire number to the history of the great discovery and the present and future of anesthesia. Apart from these journalistic notices, any celebration of the event has been so modest that it has escaped my attention. Certainly, neither the College of Surgeons nor the College of Physicians has taken notice of the jubilee in any way. There was some talk of the Society of Anesthetists honoring the occasion by dining together! But even that seems to have collapsed. The *Lancet* rejoices "that the words which proclaimed the success of

that memorable trial in the clinic of Warren were uttered in the English language." Of other rejoicings there are none.

My mention of Morrant Baker having edited an edition of Kirke's Handbook of Physiology reminds me that a new edition of that classical work has just been published by Professor Halliburton. The book has been entirely rewritten, only the original form and some of the original illustrations being preserved. It will no doubt re-occupy its old position as the most practical and interesting text-book on the subject.

The value of the diphtheria antitoxin is becoming more steadily established. Prof. Sydney Martin says that the essentials of treatment are: (1) a large dose of antitoxic serum, reckoning in normal units; (2) which must be given as early as possible in the disease; and (3) which must be given in one dose and not subdivided. He recommends a serum with a strength of about 4000 units in five cubic centimeters, which is a convenient amount to inject into a child instead of, say, forty cubic centimeters. He never gives a dose of less than 4000 units, and more frequently gives 8000. The dose ought not to be reckoned as so many cubic centimeters, but as so many units. In one hundred and forty-three cases he has not observed any bad results from the use of the antitoxin. Apart from the mere record of the tables of mortality, the beneficial results are seen in other ways: for instance, it stops the growth of membrane; in no case has it been observed that a case which was simply pharyngeal on admission became laryngeal and necessitated tracheotomy. As regards other treatment, if immediate tracheotomy is necessary the antitoxin is injected after it has been performed. In cases of faucial and pharyngeal diphtheria, local treatment is also employed, usually consisting of a steam spray of bicarbonate of soda (twenty grains to the ounce) every four hours, and a similar spray of corrosive sublimate (1 in 2000) also every four hours, so that the throat is sprayed every two hours. If there is a nasal discharge, a douche of bicarbonate of soda is used, and in laryngeal cases a warm spray of the same solution is applied over the opening of the tube. It is well worthy of notice that in the early part of this year Professor Martin attempted to do without the local application of antiseptics to the throat, but several cases of glandular abscesses of the neck occurred, so that the applications were begun again, and no more abscesses have occurred.

It is to be noticed that in the above record there is no reference whatever to intubation, and it is almost taken for granted that if laryngeal obstruction does occur the only treatment indicated is tracheotomy. Now this subject is considered by a late interne of the Hospital for Sick Children in an article entitled "Intubation versus Tracheotomy in Diphtheria." He points out that the fact that in the past the results of intubation instead of tracheotomy in diphtheria have been unsatisfactory is no argument against employing it in the future, now that in antitoxin serum we have such a valuable aid in the treatment of the disease itself. He still considers tracheotomy to be preferable to intubation from a nursing point of view in those cases where help cannot be obtained immediately during the first thirty-six hours and the obstruction in the first instance is severe. But in summing up he considers that intubation, when combined with the injection of antitoxin serum, has the following advantages over tracheotomy in diphtheria: (1) the operation can be performed more rapidly and with less assistance; (2) it does not need an anesthetic; (3) the tube can be removed at an early date, leaving no wound and no passage for the respired air except *per vias naturales;* (4) it does not necessitate the patient being kept at any time in an artificially warmed and moistened atmosphere, and obviates the danger to the lungs of unfiltered air being breathed straight in; and (5) it can be employed in cases where the parents or friends refuse to give their consent to the "cutting operation." Tracheotomy has the advantage in those cases where there is a large amount of membrane below the larynx, and also where from a nursing point of view it is unsafe to leave a patient with an intubation tube in the larynx.

The disciples of Lombroso, and those who study the necessary connection between degeneracy and criminality, have had some problems raised in a letter written by Professor Gairdner, of Glasgow, to the *Scotsman.* The Professor has received information that the Tasmanians, who are descendants of a British criminal colony, "were remarkably free from all apparent 'reversions' of inherited instincts; and that, whether judged by their actual criminal record or by the number and quality of the insane in their asylums, the race now inhabiting this oldest and probably worst of our penal settlements was as orderly, as flourishing, and as well-to-do as in any other colony, and altogether

bore most favorable comparison with any other portion of the British stock either at home or abroad." This conspicuous example of self-regeneration does not necessarily invalidate Lombroso's views, and in any case it opens the field to interesting conjectures, if not to more palpable results.

It is said that Dr. Pagenstecker, of Wiesbaden, has been over to this country to examine the Queen for failing vision. Some journals have made an annotation on the subject, referring to the internationalism of specialism, and instancing the visit of Morell Mackenzie to the late German Emperor. The cases are not quite parallel, for Morell Mackenzie's German colleagues remarked that he was head and shoulders above any other laryngologist, while it can hardly be conceded that this Dr. Pagenstecker—who has the good fortune to inherit a celebrated name—is at all scientifically pre-eminent in his own country, let alone in an international sense.

There is a widespread general belief that, as regards the consumption of alcohol, England is, amongst European nations, *facile princeps*. The statistics published at a recent congress will therefore surprise many, for they show that, taking the actual amount of alcohol, as distinguished from the quantity of alcoholic liquor, the greatest consumption per head is in France.

Shyness has fallen under the observant eye of the physician. Dr. Harry Campbell poetically describes morbid shyness as "the soul shuddering to feel itself naked." He points out the apparently contradictory characters which may go with shyness. The shy person is not necessarily silent, nor is the silent man necessarily shy. The shy person, instead of being meek, is not infrequently irascible and capable of violent fits of passion. He is apt to be suspicious and distrustful; he may be possessed of great physical courage. As regards the sex in which this trait is prominent, we have the authority of Jerome K. Jerome for it that "a woman will enter a concert-room late, interrupt the performance, and disturb the whole audience, without moving a hair, while her husband follows her, a crushed heap of agonizing misery." Is not this morbid shyness to a large extent the result of the excessive self-consciousness and affectation which is so marked at the present day in this country?

From Addenbrooke's Hospital in Cambridge comes the report of satisfactory effects of uranium nitrate in diabetes mellitus. While taking ten to fifteen grains of this drug, a patient, in the five months over which the treatment extended, gained 7 lbs. in weight, and the daily excretion of urine and sugar was reduced from 10 pints and 7600 grains to 3½ pints and 2170 grains respectively.

The "Management of Patients" is an art which we all ought to study, and one in which the best men are frequently the most deficient. From an address on this very subject by Sir Dyce Duckworth I gather the following extracts: "It is not our duty to pose at the bedside as scientific men. The physician is an artist whose skill is derived through various sciences from careful and accurate observation. He is, or ought to be, a human minister to the ills and needs of the sufferer before him, and not a pedantic professor of abstract physic." "All hesitation and appearance of uncertainty is to be strenuously avoided. A medical man who cannot keenly regard his patient, eye to eye, with firmness and directness, is hardly likely to succeed. With this must be associated gentleness, promptness of decision, a power of command, and a perfectly disciplined temper." "Dogmatism founded on sound principles is as good for patients and their friends as it is for students in the lecture-room. We must be definite and we must be lucid." "We are bound not to offend our patients either in food or remedies."

PARIS LETTER.

By Arthur R. Turner, M.D. (Paris).

Though the visit of the Emperor of Russia to Paris has nothing to do with medicine, it is interesting to note that the attendance on the outpatient departments of the hospitals fell off greatly during his stay. The people were too eager to see him to waste their mornings in a hospital waiting-room.

Temporary ambulance-stations were erected in various places, but comparatively few accidents were noted. An unfortunate man who was occupied in lighting up a public edifice fell from a great height and was impaled on the spikes of an iron railing; a little girl fell from a fifth-story window, and one or two other incidents of a like nature occurred. However, nothing took place which might not have happened had there been no crowd.

One of the Emperor's suite was Dr. Hirsch, his physician, who was physician to the late

Emperor, and whose name was often seen in the daily papers at the time of the latter's illness.

Dr. Hirsch is sixty-eight years old, having been born in the Baltic Provinces on the 28th of July, 1828. He pursued his medical studies at the Medico-Chirurgical Academy of St. Petersburg, and in 1853 entered the military service. In 1854 he passed his Doctor's thesis, and, obtaining a regimental position, served during the campaign of the Crimea in Sebastopol. In 1866 he was appointed physician to the late Emperor Alexander III., who was at that time only Grand Duke. Dr. Hirsch possesses the rank of Privy Councillor and has received many decorations, both Russian and foreign.

While there are fourteen sanatoria for tuberculous patients in Germany, two in Austria, four in Switzerland, France until now has possessed but one real sanatorium, that of the Canigou, of Vernet-les-Bains in the Pyrenees. It has been decided to build two large sanatoria—one on Mount Bonmorin, in the Department of the Puy-de-Dôme, not far from Clermont, the other on Mount Pacaraglia, five miles from Nice. Each sanatorium will consist of a central building, connected to two lateral wings by means of spacious glass-covered corridors. The whole will form a half-circle, open towards the south. The central building, 110 meters long, will contain, in addition to bed-rooms, a large hall for entertainments, and drawing-rooms, dining-rooms, and card-rooms. All the rooms of the establishment will face the south. Each bed-room will contain 70 cubic meters, and will be lighted by a window 2.4 meters in height and 1.6 meters wide. No curtain or drapery of any kind will be allowed in the room, nor will any relief exist on the walls or doors of the room. The walls and doors themselves will be of a material which can be washed, and the floor be made of cement or mosaic. The rooms will be heated by steam. The furniture will consist of a metal bedstead, a small iron table, two arm-chairs, and a bamboo couch. On the north side, and facing each room, a dressing-room with wardrobe will be built. The two wings will contain consulting-rooms, operating-rooms, and bed-rooms. In bad weather the glass-covered corridors will be used as a resort for the patients. In addition, movable pavilions will be disposed about the park.

Both sanatoria are in situations where they will be protected from the wind. The Bonmorin sanatorium will be 800 meters above the level of the sea, and the Pacaraglia 500 meters. The latter will be opened at the beginning of December of this year, and the former towards the beginning of May, 1897. The treatment will be of the usual nature employed in such sanatoria.

At the present moment a local exhibition is being held at Rouen, in which one of the curiosities is an apothecary's shop of the sixteenth century. At the entrance of the shop, visitors are received by an individual dressed in the costume of that period, who explains the various utensils, all of which, as well as the library, are very ancient. The greatest curiosity of the shop is the collection of pots in Rouen ware, numbering one hundred and thirty. They are of various colors and are marked with the names of the drugs formerly used. The celebrated chemist Vauquelin served as an apprentice in the shop in which these curious objects were used.

Professor Chauveau, the distinguished physiologist, has just given a description of a new form of binaural stethoscope. The peculiarities of the instrument are as follows: That portion which is to be applied to the region ausculted should be as massive as possible; Professor Chauveau uses a thick piece of brass, one side of which is hollowed out. The thickness of the disk should be about twelve millimeters, and the depth of the cavity in it about six millimeters. Around the disk runs a shallow groove which allows a thin rubber membrane to be stretched across the cavity. This membrane is not essential to the instrument, but allows the instrument to be used when a close adaptation of its edges to the skin is not obtainable, as, for instance, when ausculting through clothing. The heavy metallic mass of the chest-piece presents two advantages over the chest-pieces usually employed: it increases the sounds which it is desired to hear, and diminishes all sounds from the external surroundings, such as the muscular sounds from the hand holding the chest-piece. A rubber tube fastened to the metallic disk is connected with two other rubber tubes terminating in ear-pieces as in the ordinary binaural stethoscope. At about twenty centimeters from the ear, on the main tube—that is, just below the place where the two ear-tubes spring from it—a lateral tube twelve centimeters in length, opening into the atmosphere, should be placed; this tube enables the sounds of the heart or lung to arrive at the ear without being in any way modified, but, in order to obtain such a

result, it should be placed as indicated and should be of the length given. This stethoscope gives, according to Professor Chauveau, as clear a result as can be obtained with the ear applied to the skin.

One of the greatest troubles in tropical countries, and above all in some of the French colonial possessions, is to procure water suitable to drink. Recently an account was given in some of the French papers of a curious system used by the inhabitants of Annam and Tonkin. They fill large gourds with water taken from the rice-fields. Such water is undrinkable, being filled with filth of all descriptions. The gourds are placed in the sun, and are left from three to five hours exposed to its rays, due care being taken to shake them every hour or two. Exposure to the sun, and rest, cause all solid particles to fall to the bottom of the gourds, while a sticky scum rises to the surface. This scum, which is mostly due to the decomposition of organic matter, is removed whenever the gourds are shaken. Finally the water is poured off and is found to be freed from all impurities.

Dr. Félix, of Bruxelles, has recently recommended a new caustic compound for use in epitheliomata of the skin. He claims that it really has an elective action upon the diseased tissues:

Rye flour, 112 parts;
Starch, 37 parts;
Corrosive sublimate, 1 part;
Pure iodol, 10 parts;
Croton chloral, 10 parts;
Bromide of camphor, 10 parts;
Crystallized carbolic acid, 10 parts;
Dry chloride of zinc, 110 parts.
Mix in a glass mortar with a small amount of water.

The skin of the region affected is to be first rendered insensible, the epidermis removed by means of a saturated solution of caustic potash, and a layer five millimeters thick of the paste applied and covered with absorbent cotton. From six to twenty-four hours later the dressing is removed, as well as the slough produced by the paste. Fresh applications are to be continued as long as any trace of the neoplasm persists.

At the recent international congress against the use of alcohol, held in Basel, a report was presented by Mr. Jules Denis, of Geneva, proving that France at the actual moment consumed more alcohol than any other country in Europe. The total amount to each individual amounted to 13.81 liters. Switzerland followed, with 11 liters to the individual; Belgium with 10.59; Italy, 10.22; Germany, 9.34; England, 9.23. The amount consumed is increasing in France and Belgium, and in the other countries either diminishing or stationary. Such figures lend strength to the arguments of some French financiers, who are endeavoring to have the manufacture of alcohol in France made a State monopoly. In this way they hope to obtain a large extra revenue, at the same time improving the quality of the alcohol manufactured.

Dr. Panas, ophthalmic surgeon at the Hôtel Dieu, has used for some years subcutaneous injections of biniodide of mercury in olive oil in cases of syphilis. His recent *chef de clinique*, Dr. Rochon-Duvigneaud, gives the following description of the method of preparation. The olive oil should first be freed from free oleic acid, by prolonged contact of 100 cubic centimeters of oil with 30 cubic centimeters of alcohol at 95 degrees, followed by decantation. The purified oil is then kept for ten minutes at a temperature of 115° C., and then allowed to cool to between 65° and 70°, at which it is kept during the remainder of the process. Forty centigrammes of biniodide should now be added to the oil. The biniodide should first be made into paste with a small amount of oil, and then added to the remainder of the latter. The liquid should then be filtered and put up in sterilized vials. Each cubic centimeter of oil contains four milligrammes of biniodide.

The injections should be made every two days, deeply into the muscular tissue. A series consists of from fifteen to thirty injections.

In most French books treating of the subject of anesthetics it is simply stated that a certain Dr. Long, of Athens, was the first to try ether. Most of their readers, consequently, unless familiar with the subject, believe the Athens referred to to be in Greece, instead of in Georgia, U. S. A. A few days ago a small paper contained an article on the fiftieth anniversary of the discovery of anesthetics, in which twice "a certain Greek physician, Dr. W. C. Long, of Athens," was mentioned. There can be no doubt as to what Athens the writer had in mind.

The engagement of Dr. Jean Charcot, son of the late Professor Charcot, and *chef de clinique* at the Salpêtrière, to Jeanne Hugo, granddaughter of the poet Victor Hugo, has been announced. Jeanne Hugo is the divorced wife of Léon Daudet, son of Alphonse Daudet, himself the author of several romances, one of which, "Les Morticoles," is an especially bitter attack on the medical profession in France.

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Original Communications.

*SPEECH DEFECTS: THEIR CAUSES AND TREATMENT.**

BY DR. G. HUDSON MAKUEN,
Lecturer on Speech Defects in the Philadelphia Polyclinic Hospital and College for Graduates in Medicine, and Laryngologist to St. Mary's Hospital and to the Douglas Memorial Hospital of Philadelphia.

The importance of speech as a factor in mental and physical development, and the possibilities of its improvement, are not very generally appreciated. The mechanism of articulate speech is exceedingly complicated and difficult to understand. We cannot see the action of the organs, except to a limited extent, and we can form a conception of what this action is like only by its result in phonation and articulation.

Defective speech is not a disease, but a symptom, and should be treated accordingly. Each case differs from every other case, and should therefore form a special study in itself.

The problems presenting are: first, what is the character of the defect? second, what is the cause? and third, what shall be the treatment?

There are a great many kinds of speech defects, but it is probably impossible to make

* Read at the annual meeting of the Medical Society of the State of Pennsylvania, at Harrisburg, May 20, 1896.

a satisfactory classification of them, at least with our present limited knowledge and experience. We may, however, divide them with reference to their causes into two general classes, namely, those of central and those of peripheral origin—the first depending upon some lesion of the speech centre in the brain, and the second upon some lesion or structural peculiarity of the speech organs themselves. But even this classification is not always an easy one, for oftentimes the symptoms are very vague in their indications and it is only after careful and prolonged study that the original cause can be determined. For instance, take the case which I reported in the Philadelphia County Society in February of last year, referred to me by Dr. Walter Webb, of Sharon Hill: A boy nineteen years of age had never been able to speak intelligibly; he could not tell his name, and it was supposed by his physicians and all who knew him that his trouble was of cerebral origin. Indeed, it was impossible at first for any one to locate the exact cause with any degree of certainty. The speech centre was abnormal, of course, but was this abnormal condition due to some lesion of the brain itself, or of the peripheral organs of speech over which the brain presides? I made a careful study of the case, and although the mental faculties were sluggish I thought I discovered in them latent powers which might be aroused by the development of the faculty of speech. A thorough examination was made of the peripheral organs. The lips, the hard palate, the soft palate and the pharynx were normal; but there was a peculiar condition of the tongue—not an ordinary tongue-tie, but the tip of the tongue was a full inch or more too short, and the trouble seemed to be in the anterior fibres of the genio-hyoglossus muscle. It was decided to divide these fibres, and an incision was made under the tongue for a distance of three-quarters of an inch in the antero-posterior direction and one and a half inches from side to side. The cut ends of the muscle were cauterized in order to prevent their growing together and to stop the bleeding. Frequent lingual traction was then made and exercises were given, directed toward a free action of the tongue and the development of the faculty of speech. Eleven months after the operation the patient was presented to the County Society, and he recited Brutus' speech against Cæsar, far better perhaps than any one present could do it. Not only was his articulation almost perfect, but he had developed also considerable histrionic talent. Now, a year later, he is in George School, preparing for college, and the principal tells me he is one of the brightest pupils in the school. The cause in this case was, as the sequel has proved, a short genio-hyoglossus muscle binding the tongue to the floor of the mouth, and making certain important movements of this organ not only difficult but impossible.

Another case illustrating the difficulty in determining the cause of defective speech was a boy of eleven years, who stammered. Dr. John Graham, of Philadelphia, referred him to me. The Doctor said that he was growing progressively worse and had to be taken from school. He was a bright boy intellectually, but practically dumb so far as his speech was concerned. A thorough examination was made of his vocal organs, and in them were found no less than three little irregularities, any one of which might give rise to this very serious affliction. The first in importance was an adenoid growth in the vault of the pharynx, which not only interfered with respiration but impeded to a certain extent the normal action of the pharyngeal and palatal muscles; the second was an elongated uvula; the third a slight asymmetry in the genio-hyoglossus muscles, the fibres on the left being somewhat shorter than those on the right, and this had the effect of giving the tongue a kind of one-sided action. In addition to the objective symptoms which I have named, there were at times marked choreic twitchings of the muscles of the face.

After studying the case carefully for several days I sent to his physician a diagnosis of chorea of the facial, lingual, pharyngeal, and laryngeal muscles, due probably to adenoid vegetations; and I recommended the removal of these growths and the amputation of the tip of the uvula, to be followed by a systematic course of training for the purpose of correcting his habits of faulty muscular action in both oral and facial expression. This line of treatment was adopted, and the result was a complete cure inside of two months. The cause in this case was an adenoid growth, and the patient has not stammered since its removal.*

Another case, which I have under my care at the present time, is that of a young man nineteen years of age, who had always stam-

* NOTE.—This case was shown to the Society, and the methods of training, etc., illustrated.

mered, and was growing worse. Examination of the organs of speech showed nothing irregular except a slightly elongated epiglottis. I put him on a course of speech-training for several weeks, during which time he made some improvement, but it was by no means satisfactory, and I have now instituted measures for the reduction of the size of the epiglottis, and am in hopes that we have arrived at a solution of the problem.*

The history of these three cases shows how difficult it is to determine the exact cause of these defects. In the first case it was undoubtedly a short genio-hyoglossus muscle; in the second, an adenoid growth; but in the last case the cause is not so clear —it may be the elongated epiglottis, and if so I shall expect my present treatment to remove the trouble.

You will observe also from the foregoing that effort was made to arrive at the cause of these defects mainly by the process of exclusion, and only those parts of the organs of speech which presented some anatomical irregularities or pathological conditions were attacked. It is interesting to find how slight a deviation from the normal will at times prevent the acquirement and development of good speech. That which is a pleasurable function under favorable conditions becomes irksome and difficult under slightly unfavorable conditions; and therefore, when speech is delayed in children, a careful search for the cause should be made at once, and so far as possible all anatomical irregularities and physical obstructions should be removed.

These irregularities and obstructions act in two ways to delay or arrest the development of speech: they interfere mechanically with the free action of the organs, and also reflexly through the nervous system. They may act in either of these two ways separately, or in both simultaneously, and the latter is probably the more frequent.

The removal of these irregularities and obstructions constitutes the first step in the treatment of these cases. The next and most important step is the mechanical training of the organs of speech. They must be trained to do things which they have never been able to do before and which the operation has now rendered possible. If the corrective operation could have been done in early childhood, before the development of the habit of defective speech, then the special training would not be so necessary; but this habit, the result of years, it may be, of faulty muscular action, must be broken up and removed by special and appropriate exercises. To do this we must have the co-operation of our patients. They must realize how great a calamity has befallen them, and be willing to try to throw it off. This co-operation I have not found difficult to get. Children of eight or nine years, and even younger, appreciate their misfortune sufficiently to make them willing to do almost anything to overcome it. The exercises, moreover, are not difficult, but rather agreeable to most people. There is a peculiarly pleasurable sensation, as I have suggested above, in the sound of one's own voice, especially when the organs are in good condition, and this sensation is an important factor in the early development of speech.

The special kind of exercises required depends on the character of the defect. As there are no two cases alike, no definite rules can be given. Develop the undeveloped parts by appropriate exercises; that is the secret of the whole process. Of course, to know the appropriate exercises and their application presupposes some special knowledge of the mechanism of speech such as only the elocutionist or the singer may possess.

You will observe that I have considered only those cases of speech defect which are due to anatomical peculiarities or mechanical obstructions in the peripheral organs, and have only mentioned in passing those of cerebral origin. I have done this because I believe the former class has been greatly neglected, and because I believe that very many cases which really belong to this class, and which if recognized could be cured, are relegated unwittingly to the cerebral class and therefore do not receive suitable treatment.

There is great need for further investigation in this line of work.

1419 WALNUT STREET.

*Note.—Since writing this article the boy's speech has improved greatly, and he tells me that he scarcely ever stammers at all. The general condition of his throat is also much improved.

THE OPERATIVE TREATMENT OF INGUINAL HERNIA; REVIEW OF THE VARIOUS METHODS; PREFERABLE OPERATION; A REPORT OF CASES BY THE AUTHOR'S METHOD.

BY J. COPLIN STINSON,
San Francisco.

In deciding on an operation for the radical cure of hernia, the problem is: to restore the structures to their normal positions and to

their physiological relations and uses. Until the more recent methods, failure was a common result of treatment; and even now, few operators are so successful that failures do not sometimes occur. I believe that in the immense majority of cases the operation should be followed by a complete and permanent cure; that in most of the remainder the patients should be greatly benefited; and that the slight disfavor with which operation is regarded by some is due to the bad results obtained by surgeons whose technique has been imperfect and whose operations have been incomplete or illogical and unscientific. I would emphasize this point: The operation should not be performed except by surgeons familiar with the principles involved and also with the special anatomical conditions associated. In an earlier paper (in the *New York Medical Record*, March 7, 1896) I reported seventy-nine operative cases of inguinal hernia, and gave an analysis of the methods employed and results obtained. I stated that an operation, to be followed by a permanent cure, should (1) cause total obliteration of the sac; (2) allow for the safe transmission of the cord and its structures—*i. e.*, the cord should not be subject to pressure in any part of its course, and the operation should not be followed by pain, thickening or inflammation of the cord, or in any other manner interfere with its functions; (3) not result in atrophy, inflammation, suppuration, etc., of the testicle; (4) close durably the breach in the abdominal wall. I then described an operation which I considered filled all the indications and overcame all the objections to the methods hitherto described. Briefly the steps of this operation are:

1. The external incision begins nearly on a level with the anterior superior spine of the ilium, is carried obliquely downward parallel with and about half an inch above Poupart's ligament, and ends at the centre of the external ring.

2. It divides the structures superficial to the external oblique aponeurosis. The latter is well exposed, and a director is passed through the external ring beneath this layer, which is divided to about half an inch above the internal ring; the cut edges are lifted and freed from the structures beneath, exposing internally the internal oblique and transversalis, their conjoined tendon, and the outer edge of the rectus, externally the shelving sharp edge of Poupart's ligament.

3. The cord and sac are examined, and any adhesions to surrounding structures separated. Next they are separated from each other high up within the internal ring. The sac is examined, carefully opened with a short cut, and internal adhesions, if any exist, separated; if the contents are of omentum and in any manner changed, empty the sac. Ligate the vessels only, and, to insure the ligatures from slipping off, use the fixation ligature. The vessel to be tied is defined by spreading out the omentum, and a needle carrying the ligature is passed around the artery by piercing the tissues of the surrounding omentum; the ligature is then tied, and the vessel severed beyond the ligature. By this means the ligature is fixed in the omentum. When the adhesions between the sac and cord are firm, open the sac first; this saves time, as the limitations of the sac can be more readily defined and the adhesions more easily and quickly separated. After clearing out the sac, drag down its neck with forceps. Remove the sac, its neck, and the peritoneum continuous with it, as high as possible, bringing the cut edges together with catgut sutures (supercorrection of the peritoneum at the dilated internal ring; it is better to overcorrect, as the serosa is sure to relapse a little). When the forceps are removed, the sutured edges at once slip back into the abdomen. The cord is examined, and any markedly varicose veins are excised high up within the internal ring.

4. Expose the internal ring, through opening in transversalis fascia, by retracting the internal oblique and transversalis, their conjoined tendon, and the external oblique aponeurosis. Clear out the canal of masses of fat, glands, and adhesions; remove all such masses that crowd into the internal ring from the subperitoneal tissue; take the cord and place it at the lower angle of the internal ring. Now close the internal ring with a chromicized tendon suture, commencing at its upper angle; suture from above downward, leaving only sufficient room at the lower angle close to the pubic bone for the cord and its full vessels.

5. The aponeurosis of the external oblique is retracted; and the edges of the internal oblique and transversalis, and their conjoined tendon, are sutured to the shelving edge of Poupart's ligament with chromicized tendon, three sutures to the inch. At the lower angle, close to the pubic bone, only sufficient room is left for the cord and its full vessels.

6. The divided edges of the aponeurosis of the external oblique are brought together with a tendon suture.

7. The skin is united with fine silk or catgut, without drainage.

Stitches to Use.—The continuous stitch may be used to unite the edges of the peritoneum, close the internal ring, and unite the edges of the aponeurosis; interrupted stitches to unite Poupart's ligament to the contiguous muscles and their conjoined tendon. In my last four cases of hernia I used with every advantage a stitch described by C. Ford. In closing the peritoneum, the internal ring, and the cut aponeurosis, I used only the first half of the stitch; for uniting Poupart's ligament to the contiguous muscles and their conjoined tendon I used it complete. In an earlier paper on the operative treatment of femoral hernia I gave a description of this stitch.

Suture Material.—Chromicized tendon is the most suitable material for a buried suture. It is non-irritating, and is not absorbed for two or three months.

Dressing and After-treatment.—Bichloride-of-mercury gauze, held firmly in place by long strips of adhesive plaster, which make even pressure; then a layer of cotton and firm spica bandages. Dress the wound on the seventh day, or earlier if there are indications for interference. In removing the strips, pull the ends toward the wound, so as not to tear the freshly united edges asunder. Apply gauze, strips, cotton, and bandages, as before. Keep the patient in bed two weeks or longer if possible. If primary union is not secured, keep the patient in bed till cicatrization is complete. The firm bandages are not removed until one month after the operation.

The principles upon which modern operations for the radical cure of hernia have been based are the following:

1. Simple ligation of the sac, and extirpation (Socin).

2. Ligation of the sac and suture of canal (Czerny, Banks, Barker, Championnière, MacCormac).

3. Infolding of sac and suture of canal (Macewen).

4. Torsion of sac, and suture of sac in canal (Ball).

5. Torsion of sac, and suture of canal with sac external to the aponeurosis of external oblique (Kocher).

6. High ligation of sac, and suture of canal after displacement of cord (Bassini, Marcy, Halsted).

7. High ligation of sac, and closure of canal by cicatricial plug, the wound being allowed to heal by granulation (McBurney).

To which I may add the operation I have described:

8. Supercorrection of the peritoneum at the dilated internal ring, by removing the sac and the peritoneum continuous with it as high as possible; closure of the cut edges of the serosa with a continuous suture; suture of the internal ring, with the cord close to the pubic bone; reinforcement of the internal ring and closure of the canal by uniting the contiguous muscles and their conjoined tendon to Poupart's ligament.

We can only arrive at the very best conclusions as to which is the preferable operation for the cure of inguinal hernia by reviewing the several modern methods of operation, keeping in mind that the point to determine the choice is, which restores the structures most durably to their normal positions and physiological relations and uses.

I shall review the methods of Bassini, Halsted, Kocher, Macewen, and the operation I have described elsewhere in detail.

Bassini's and Halsted's methods are so nearly identical that they can be considered together. Both these operators displace the cord from its normal position, and form new internal and external rings and a new canal. Bassini transplants the cord to the upper angle of the dilated internal ring, the cord finding its way down beneath the aponeurosis of the external oblique between the two layers of buried sutures. Halsted displaces the cord two centimeters nearer the anterior superior spine of the ilium, between the edges of freshly cut muscles, the cord finding its way down superficially to the aponeurosis, between the layer of buried sutures and the skin sutures; he also excises in the canal what he designates as superfluous veins of the cord. In both these operations the cord, on account of the displacement, is shortened and on the stretch; from its pathological relations it is subject to pressure, muscular contraction, and adhesion, from the new internal to the external ring, thus interfering with the functions of the cord, its nerves and vessels. Following the operations there may be thickening, swelling, tenderness, inflammation, etc., of the cord, and swelling, inflammation, sloughing, hypertrophy, atrophy, etc., of the testicle. Thickening and swelling of the cord, etc., I have frequently seen following the Bassini operation. The cord is put on such a stretch that it is subject to the coutinuous traction of the testicle on the one hand and the bladder on the other. There is no doubt, with this

traction aided by gravitation, that eventually the cord will find its way back to its original position. The higher the cord and the internal ring are displaced, the nearer they are to parietal peritoneum, omentum, intestine, etc., and thus by contiguity relapse is favored. Disturbances of the bladder, scrotum and penis sometimes follow these operations No immediate, and little or no remote, benefit is derived by excision in the canal of veins of the cord, as it does not materially reduce the bulk of the cord at the internal ring where the breach first occurs. The neck of the sac should not be tied off, as the ligature is liable to slip, and, in tying the knots, intestine, omentum, etc., may be included, giving rise to obstruction, adhesion, etc. Ligating also leaves a pouch in the peritoneum and causes puckering of the serosa, which favors the formation of adhesions. A single layer of buried sutures, or two layers with the cord interposed, is very objectionable. The edges of the different layers, not being brought accurately together, overlap, become irregularly matted together and adherent to one another, and on this account the union that results is weak and evanescent. Bassini has fewer relapses than Halsted. This is easily explained: the former uses two layers of buried sutures, while the latter uses only one; the deeper layer of sutures forms a wall, and the other buried layer forms an additional barrier against relapse. The following reports bear out the objections to these operations:

Halsted, in the *Johns Hopkins Reports*, May 15, 1895, reports atrophy of the testicle in three cases following his operation.

I have notes of a case operated on by Halsted's method. The patient, a male nurse, was admitted to the New York Post-Graduate Hospital with a mild attack of gonorrhea complicated with an enlarged and painful testicle, while I was house surgeon. Examination showed a marked recurrence of the hernia; on the same side the cord was enlarged and painful, the testicle thickened and inflamed. The cord and testicle of the other side were normal and did not subsequently become involved. Under treatment the urethritis got well, and the pain in the cord and testicle subsided, but when the patient was discharged from the hospital there was marked thickening of the cord and enlargement of the testicle.

W. B. Coley, in the *American Journal of the Medical Sciences*, May, 1895, reports a case of orchitis, which terminated in suppuration and required incision, following a Bassini operation.

W. B. DeGarmo, in a clinical lecture at the New York Post-Graduate School (reported in the *Post-Graduate Journal*, September, 1896), showed six patients operated upon by Bassini's method. In the first case "there were no adhesions in the sac; forty-eight hours after the operation the patient was passing but little urine, a trocar was introduced, and thirty-six ounces of urine were drawn off; later E. Fuller opened the bladder through the perineum and introduced a tube, which was kept in ten days." In the second, "a double inguinal hernia, the patient had a marked edema of the scrotum on the right side." In the third, "after the operation there was an enormous edema of the scrotum and penis; there is still some enlargement of the testicle, and he will have to wear a suspensory on account of it." In the sixth "the testicle was at the external ring, the cord was made shorter by the Bassini operation, the testicle sloughed off and another operation had to be done for its removal."

G. M. Brewer, in the *American Medico-Surgical Bulletin*, in "A Report on the Condition of the Parts Found upon Autopsy Six Weeks after Bassini's Operation," stated that "a certain amount of induration was felt for some time over the course of the spermatic cord extending from the testicle; this, however, was not specially tender to the touch. The portion of the peritoneum lining the inguinal region showed a slight puckering near the internal abdominal ring: the skin and subcutaneous tissue were found moderately adherent to the external oblique. The vas deferens, spermatic artery and a number of veins were traced upward through the artificially made internal ring, and downward into the scrotum, becoming more united and apparently bound together as they approached the testicle."

This is not a detailed report from all the literature of the day, nor have I written any operators for reports of their cases. I do not think it necessary. The above cases alone are sufficient to show that the principles of these methods, like those in McBurney's operation, are false in theory and are no longer justifiable in practice; and furthermore, when relapse does occur on account of the displacement and disarrangement of structures, no truss can be worn with any degree of comfort. A possibly cured rupture, a hypertrophied or atrophied testicle, and a displaced, thickened and adherent

spermatic cord, are a most deplorable combination.

The methods of Macewen and Kocher are sometimes used, but both are open to so many objections that they are being abandoned. These methods are incomplete, as the canal and internal ring are not exposed. Kocher himself states that his method can be used only when the sac is not too large or its wall too thick. A great deal of damage is done in trying to work through a small slit in the aponeurosis of the external oblique, as all the structures are bruised and torn during the manipulations of the sac. The inner and outer borders of the internal ring, the contiguous muscles with their conjoined tendon, and the shelving border of Poupart's ligament, are not exposed. Their methods of dealing with the sac are illogical. The sac should not be twisted, tied off, and anchored superficially to the external oblique; nor should it be infolded and anchored at the internal ring, in the canal, or in any other place. I have already stated the objections to tying off the sac. Twisting the sac has the same objections, and in addition, as Kocher himself states, it is liable to produce sloughing. Anchoring the sac forms a cone in the peritoneum into which bowel, omentum, etc., slip, and, by the constant pressure of a protrusion from behind and within, this is converted into a wedge which, by opening the internal ring and canal, allows a relapse of the hernia. Folding the sac into a pad or truss, which is placed in the canal and ring, favors relapse, as pathological material is returned to the abdomen. A pad or truss making pressure over the internal ring from the outside is very seldom curative, and is bad enough; but a pad or truss in the canal and ring is worse, as it keeps these avenues open, and, being acted upon by the pressure of the diaphragm transmitted through the intra-abdominal contents, favors a return of the protrusion by acting as a wedge. In fact, neither of these methods fulfills any of the indications for a radical cure; the suturing of the canal and rings is incomplete, and none of the structures are restored to their normal positions, relations, and uses.

In the operation I have described in detail, the canal and the internal ring are well exposed. The aponeurosis is lifted and freed from the structures beneath, so that the gap can be closed by bringing the deep structures accurately together without tension. The removal of the sac and the peritoneum continuous with it as high as possible supercorrects the peritoneum at the dilated internal ring; it is better to overcorrect, as the serosa is sure to relapse a little. This causes obliteration of the sac; strengthens the peritoneum in the inguinal region by converting the outer surface from a convex to a slightly concave surface; carries the former location of the sac high up within the abdomen, away from the internal ring; while the suturing of the cut edges leaves a smooth surface and allows free movement of the intestines over it. Ligating the vessels of the omentum only is perfectly safe, and has the advantage of doing away with numerous and massy ligatures, omental stumps, and lumps of fat constricted by ligatures.

Very seldom will it be necessary to excise veins of the cord. I have frequently met with enlarged veins which, in a short time after the removal of the sac, etc., resumed their normal size. Where there is a markedly varicose condition of the veins, their excision high up within the internal ring is followed by good results, as this reduces the size of the cord above the canal and internal ring. On account of this the internal ring and canal can be made a little smaller. The clearing out of the rings and the canal, and the removal of all material which bulges into the internal ring from the subserous tissue, removes the material which would favor a relapse by keeping the rings and canal open.

Placing the cord at the lower angle of the dilated internal ring, close to the pubic bone, restores it to the normal position where it is not subject to pressure nor in any other manner interfered with; it hugs the pubic bone, whence it passes down to the base of the bladder. It is absolutely unnecessary to form a new internal ring; the suturing of the dilated internal ring, as described, reduces it to the normal size. The lower the internal ring and cord are placed, the farther away they are from parietal peritoneum, intestine, etc., and thus not likely to favor a relapse.

The closure of the internal ring is the most important step of the operation. Success depends chiefly upon the accurate suturing of this opening in the transversalis fascia, as it is at this opening that the breach first occurs. This layer of sutures forms a firm wall, while the other layers closing the canal and external ring (leaving only sufficient room next to the pubic bone for the cord) reinforce the internal ring and form additional barriers against a relapse. The layers are sutured sepatately: by this means only can the different layers be accurately ap-

proximated, and thus firm and lasting union result.

One of the chief reasons of failure in operations for hernia has been the efforts of operators to improve on nature by introducing extraneous substances, and disarranging the structures instead of repairing and restoring them durably to their normal positions.

This operation I have used in six cases. In my last two cases I used with advantage, in dealing with the sac, what I call "supercorrecting the peritoneum at the internal ring." I first described this in an article on "Femoral Hernia" in the *New York Medical Record.* Usually about an inch and one-half to two inches or more of the peritoneum above the neck of the sac can be readily drawn down and removed.

Although none of these patients have reached the three-year limit yet, so far the results are interesting, as they show how easily the steps of the operation can be carried out, how well the wounds have healed, and how well the operation fulfills all the indications and overcomes the objections to all other methods.

Of these cases, three were reducible, two irreducible omental, and one a strangulated intestinal inguinal. In every case the steps of the operation were easily performed. All the wounds healed by primary union.

In one case, operated upon by Dr. Dudley Tait and myself, the surgical dresser in the hospital ward removed the dressing from the wound on the third day after the operation. Fine catgut had been used as a skin suture. In removing the adhesive strips he tore open the skin-wound by pulling the newly cut ends of the strips from the wound. The final result will not be marred by this mishap.

In a strangulated intestinal hernia, operated upon by Dr. G. Gross and myself, we had an opportunity of making a post-mortem examination four days after the operation. The history of the case presented several points of interest. The patient, W. O. W., aged seventy, had an inguinal hernia on the right side. Since 1885 he had worn a truss, which lately failed to do its work. The rupture came down twice during the first week of June, 1896, and was reduced on both occasions by a physician, the second time on June 5, but the pain in the abdomen continued and, as it became more severe, bilious vomiting set in. As the intestine was apparently reduced, and the patient had at other times had bilious attacks and abdominal distress, he was treated by his physician for biliousness, but without relief. A consultation was called, but notwithstanding the treatment given the patient became worse. On June 7 the vomited material was of a greenish-brown color, and next day it was brownish and foul, but not fecal. Dr. Gross and I were called in and met the other physicians in consultation. Diagnosis of strangulation at the internal ring was made. All agreed on operation at once. Assisted by Dr. Gross, I performed an operation, which showed the sac at the internal ring the size of a small pear; it was full and tense, and when opened some blood-stained fluid escaped. At the internal ring was a loop of small intestine constricted by a firm fibrous band one-third of an inch wide; the constricted loop was purple and had not lost its lustre. There was no gangrene, no necrotic spots on the bowel or at or above the constriction, which was divided. When the intestine was drawn down, a large quantity of pale yellow serum escaped from the abdominal cavity. The circulation gradually returned to the bowel. An enlarged gland, the size of a hickory nut, which bulged into the internal ring from the subserous tissue, was removed. Drainage was not used, as I did not consider it necessary; the conditions present did not indicate it. The color and lustre of the bowel were good, while above and below the seat of constriction the intestine was not inflamed, and there was no evidence of pus or sepsis. The fluid that escaped from the peritoneal cavity was of a clear yellow color, not the least irritating or septic. The sac was dealt with, and the other steps of the operation carried out, as I have described in detail elsewhere. Operation was not followed by shock; pulse 98 and fairly strong; no vomiting. Two hours afterward the pulse was 84, full and strong; rectal temperature 99.6°; patient complained of gas-pain, but could not expel any gas, even with a rectal tube. At 11 P.M. (seven hours after the operation) the pulse was 84, rectal temperature 98.2°, abdomen slightly distended; no gas had been expelled, so a small enema was ordered. The bowels moved; considerable gas was expelled and urine passed. On the following day the pulse was 80, rectal temperature 99.8°; patient had vomited once; no gas had been expelled since 3 A.M.; abdomen moderately distended. Another small enema was given, bowels moved, and some gas was expelled; then by catheterization 1½ pints of urine were drawn off. On account of distention persisting, calo-

mel gr. ⅙, with sod. bicarb. gr. iij, was ordered every hour, for six doses. At 10 P.M., pulse was 86, rectal temperature 101.2°, abdomen more distended. June 10, at 7 A.M., temperature was 101.8°, pulse 105; at 4 P.M., pulse 104, temperature 102.2°; at 9.30 an enema was given and some gas was expelled. On June 11, pulse was 128, temperature 103.6°; patient died at 6.10 P.M.—rectal temperature 103.6°.

Autopsy by Dr. Gross and myself at 9 A.M., June 12. There was no redness or other evidence of inflammation in any of the sutured layers; abdomen was distended; no fluid in the peritoneal cavity. Palpation of the inguinal and scrotal regions showed the cord and testicle to be normal. Firm pressure gave no evidence of weakness of the abdominal wall. The skin-edges were united. We were surprised at the degree of union present in the other layers. The skin was not adherent to the aponeurosis. The edges of each of the sutured layers were united with fresh plastic lymph, which also covered the sutures. The edges of the peritoneum were smoothly united, and located up in the abdomen away from the internal ring. The cord was freely movable. The bladder, kidneys and liver were normal. A small red line, covered with a thin film of lymph, was found at the former seat of constriction, which was in the ileum about 1½ feet above the ileo cecal valve. There was no obstruction of the bowels. The bowel above the former site of constriction was distended, and for about two feet there was local peritonitis, which had also extended downward for about six inches. The rest of the intestines was not the seat of any inflammatory action, except the cecum, which on its outer side was bound by old adhesions to the side of the pelvis. About one foot above the ileo-cecal valve was a diverticulum of the ileum, communicating with the latter by an opening 1¾ inches wide; its coats were continuous with those of the ileum; it measured 2¼ inches long, 1¾ inches wide, widest at its junction with the ileum.

In the other cases the results have been very satisfactory, with no symptoms referable to the cord and testicle or any other structures.

Dr. Robert T. Morris, of New York, in writing me April 14, 1896, of the first case in which he performed this operation, stated: "I tried your hernia operation last Tuesday. It seemed all right, but time must determine the value of the resource." Dr. H. G. McGill, of San Francisco, on June 6, 1896, performed my operation with a satisfactory result on a patient sixty-eight years old with a strangulated omental hernia. Dr. C. Ford, of San Francisco, has also performed it. His patient had previously been operated upon by Macewen's method. The protrusion recurred at the internal ring and the upper three-quarters of the canal. The result so far is gratifying.

CONCLUSIONS.

From a study of the cases above cited, and comparison of the methods used by various surgeons, I can only draw the following conclusions:

1. That the operation I have described fulfills all the indications for a radical cure.
2. That it has all the advantages of all the other operations hitherto described, with none of their disadvantages.
3. That, having additional advantages, it should be followed by the best results.

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DEATH FOLLOWING THE ADMINISTRATION OF NITROUS OXIDE.

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The following case illustrates the influence which nitrous oxide gas may have when administered to persons suffering from atheromatous blood-vessels. A man between fifty and sixty years of age visited the office of a well known dentist who makes a specialty of extracting teeth under the influence of nitrous oxide gas, in order that he might have removed one or two molar teeth which were giving him trouble. He had often taken

nitrous oxide gas in the same dentist's office on previous occasions, and always without any ill-effects whatever. On this occasion he took the ordinary quantity, his teeth were extracted, and he returned to consciousness with the usual rapidity. He left the dentist's chair and walked to a washstand, and began to rinse out his mouth with water. While doing this he stated that his right hand felt numb, then complained of the extension of this numbness up his arm, and rapidly to his leg and side. He was helped to a sofa, where in the course of a very few minutes he became partially unconscious. When I saw him the attack had already been in existence about twenty minutes. He was breathing stertorously, seemed to understand questions put to him, but was unable to answer them clearly, and in the course of a very few minutes passed into absolute insensibility, which, notwithstanding the use of venesection and other measures, deepened into a coma, in which he died about twelve hours after taking the anesthetic.

This case is reported not as a death due to the direct influence of nitrous oxide gas, but as an instance of the fact that the marked rise of arterial pressure which is produced by the administration of this drug during the period of anesthesia may cause the rupture of a blood-vessel in persons who have a tendency to apoplexy.

KOLA DURING LABOR.

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In the Therapeutic Gazette of 1893, page 819, I called attention to the value of the frequent administration of highly concentrated foods during labor when occurring in delicate subjects or of long and tedious duration. Feeding, as referred to in my former article, and the administration of full doses of quinine, have been my mainstays to keep up the strength of the patient and the tone of the uterus; and with these two resources I have materially lessened my percentage of forceps cases in the last eighteen years. But recently I had a case where neither one of these resources could be utilized. For ten days I attended a lady who was suffering from an obstinate malarial fever; during this time she had a rather severe uterine hemorrhage, which exhausted her very much. Owing to a very irritable stomach, little food was taken during her illness; and this circumstance, together with the fever and hemorrhage and a not very strong constitution, resulted in a condition of great weakness; in the midst of which, on September 17, labor at full term began. What to do to keep up the patient's strength when she could not take food, nor yet quinine owing to an idiosyncrasy, became a serious question.

Having had considerable experience with kola, and having proved to my own satisfaction, by trials on myself at various times, that this remedy was capable of relieving exhaustion, increasing and prolonging force, I concluded to try its effects on my patient. Labor began at noon and ended at 6 P.M. The patient was given a teaspoonful of Parke, Davis & Co.'s fluid extract of kola every hour from the commencement of labor—which required no instrument or manipulation of any kind—until the birth of the child. The patient, her nurse, her mother, and myself, were all astonished at the easy progress of parturition, and the entire absence of weariness and exhaustion: the patient said it was the best and easiest labor of the four she had had, and that she felt better and stronger after labor was completed than before it began. This result is given just as it occurred. The remedy was given on the basis of its physiological action. It surpassed our expectations. Whether it stimulated uterine muscular force, I do not know. The pains were good and strong, the second stage of labor lasting but an hour.

This is a new field for kola, and inasmuch as my first case in the use of this drug turned out so remarkably and so happily, I shall try it again the first opportunity that offers. Physiologically it is an ideal remedy in delicate subjects and in tedious labors, and in at least one case it fulfilled all expectations. I have reported the action of kola in this case (if it was the kola, which I am inclined to think it was), that others may try it under like circumstances.

THE SURGICAL CARE OF PATIENTS IN THE GYNECOLOGICAL DEPARTMENT OF THE JOHNS HOPKINS HOSPITAL.

By J. G. Clark, M.D.,
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The varying standards by which the work of surgeons has been judged in the past have depended largely upon some one characteristic supposed to be adequate for success.

The barber-surgeon attracted patients by his gentleness of manipulation in removing superficial epidermal growths; but as surgery advanced and included more serious ailments within its compass, it was transferred from the domain of the barber-surgeon to that of men better prepared to diagnose and treat the still trivial diseases which were considered amenable to surgical interference. Dexterity and celerity in manipulation then became the requisites for the highest perfection, as surgery fell under the title of a manual art. From this crude beginning the scope of the work began to enlarge, including graver operations and requiring, besides mere manual dexterity, greater depth of perception and judgment in its devotees, thus attracting men of a higher type of intelligence. Surgery then became a high art, in which manual skill however still continued to be the *sine qua non* for success, and the surgeon who could complete a given operation in the shortest time was ranked the best among his fellows.

The discovery of anesthesia and its adoption by surgeons marked the real beginning of substantial progress in surgery. Operations which had not seemed possible to the most optimistic dreamer were now attempted and carried out successfully; but many patients died of septicemia and pyemia, and healing without suppuration was considered an untoward phenomenon. The peritoneal cavity was still forbidden ground, and the surgeon only went into this field when compelled to.

After the discovery of the principles of antisepsis by Lister, surgery quickly took its place among the sciences, and now, instead of a few requisites, many became essential for success. The surgeon of to-day must be a skilled diagnostician, a judicious and skillful operator, and a good pathologist, well versed in all the principles of bacteriology and the conditions underlying wound-infection. Only through this knowledge of bacteriology will he be able to criticise the details of an operation and regulate the conditions leading up to and following the operation.

At the present day, when we hear of the surgical mortality of a given surgeon being abnormally high, we are prone to reflect on his technique, forgetting that there are many links in the surgical chain, the breaking of any one of which will cause disastrous results.

Success in surgery does not by any means depend alone upon keeping a wound germ-free. The careful diagnosis and ante-operative study of a case is of the greatest moment. The general principles of surgery adopted by the best surgeons and gynecologists, and many of the technical details, are more or less crystallized, but there are yet loopholes to be guarded. The refining process of scientific research is gradually eliminating the faulty and unnecessary details, and adding those required to make a perfect whole.

The writer's excuse for describing the details in vogue in the gynecological department of the Johns Hopkins Hospital is that some reader may find something which will add to the perfection of his surgical work.

General Care of the Patient before Operation.—In order that the best results may be obtained, the details of the preliminary preparation after an operation has been decided upon demand the most careful supervision. The surgeon of a decade ago always decreed a few days' or weeks' preparatory treatment, consisting of rest and tonics, essential to the proper building up of the patient's general tone. This principle has to a considerable extent been overlooked by many surgeons of to-day. Dr. Kelly has well said that "now that we have settled many of the cardinal points in surgery, we can well afford to look over the waste-basket of the past from which we may cull many ideas which are still of value."

The extremely interesting and instructive research of Flexner, of the Johns Hopkins University, on terminal infections, brings up this point in a new light, and we seem to read between his lines in a most startling way the necessity for a more minute examination of the general condition of our surgical patients before operation than is often given. Dr. Flexner has shown that the course of chronic diseases such as nephritis, organic disease of the heart, and many others, is brought to an abrupt end by a terminal infection with some one of the pus-producing organisms.

If these general medical cases are frequently terminated this way, how much more likely are the same cases to be infected if operated upon!

In view of these facts, it behooves the surgeon to study thoroughly every case, and if necessary advise against operation or post pone it until the patient is in better physical health, where there is chronic organic disease associated with the surgical affection.

The gynecologist must always bear in mind that the symptoms which his patient refers

to her pelvic organs may be merely one expression of a general train of symptoms produced by some disease of another organ. A case in point, admitted by myself to the gynecological wards of the Johns Hopkins Hospital, comes to mind. The chief complaints of the patient were: great bearing-down or dragging pains, and general weakness which had been gradual in onset but steadily increasing. Examination revealed a complete rupture of the recto-vaginal septum, which had occurred about two years previously. Her symptoms were distinctly referred to this disability, as she was convinced that all of her pains originated here. On examining her urine the following day, it was found to be loaded with sugar. The symptoms of diabetes were then rather obscure and consequently had been overlooked. All thought of an operation in her condition was promptly deferred, and the patient was transferred to Professor Osler's wards, where she died a few weeks later in diabetic coma. Autopsy revealed in this case a terminal streptococcus infection.

One such case illustrates most graphically the dangers of precipitate operation in cases suffering with chronic disease.

The rule in the gynecological department of the Johns Hopkins Hospital is to take first the patient's general condition into account before deciding upon the course of treatment to be pursued in her special disease.

The cycle of the patient's existence in the hospital, from admission to discharge, can best be described by detailing the course pursued in a typical abdominal case.

Preparation of the Patient before Operation.—The general preparation of all patients on entering the wards is the same, whether a plastic or an abdominal operation is to be performed. Ward wrappers, night-gowns and under-linen are furnished all patients who enter the public wards, and a full hot tub-bath is given at once.

The first day the patient is in the ward, after she has become accustomed to her new surroundings, one of the assistant resident gynecologists takes a very full history, the details of which are grouped under the following headings: marital history; menstrual history; family history; past history; present illness; general condition. Bearing directly upon the question of resistance to infection is the family history, which is gone into at considerable length: a descent from a strong or feeble ancestral tree must bear some weight in coming to a conclusion as to the probable resistance of a patient to infection; but of especial importance is the question of the presence of any chronic disease. Any symptom indicating the possible presence of chronic valvular disease of the heart, diabetes, cirrhosis of the liver, or nephritis, must be carefully investigated. After the history is completed and the urinary analysis made, the resident gynecologist in his daily rounds adds the notes on the general and special physical examination.

Of especial importance in gynecological cases is the careful observance of any peculiarity of temperament pointing towards enfeeblement of the patient's mental condition. In hospital practice, where the wards are often crowded to their fullest capacity, individual idiosyncrasies or bizarre action are liable to be overlooked by both nurse and doctor, and a patient who has distinct signs of mental impairment may be subjected to some operation which may precipitate melancholia or acute mania. Many cases of post-operative insanity unquestionably would be avoided by a closer observance of the patient's mental condition. In a number of instances which I can recall, patients have been admitted to the gynecological wards suffering with various phases of mental depression, which they or their attending physician attributed to some trivial gynecological ailment. In such cases operative treatment is invariably advised against, as it will quite probably be followed by a sudden outburst of acute mania or a steady decline into the deepest melancholia.

There is, however, another class of patients where operation is indicated. A patient may have a myoma of the uterus which she discovers by accident, and at once becomes greatly alarmed. If the tumor is not giving rise to any discomfort, and she is a reasonable woman, the nature of the growth and its symptoms should be explained to her and operation advised against. In some cases the presence of the tumor will give no further concern, while in others the patient continues to worry and is made miserable by the feeling that there is impending danger. If one were permitted to coin a term for this symptom, it might be called *omaphobia*. Under these circumstances operation may be advised.

After the full examination and review of the history have been made, and an operation has been decided upon, one or more days may elapse before it is performed, depending upon the exigencies of the case.

The urinary examination consists of the

heat test for albumin and the Fehling test for sugar. A description of the physical characteristics, and the results of a careful microscopic examination, are recorded on detachable slips in a "urinary book." The separate examinations are kept on one slip, and when the history of the case is filed away the slip is attached to it.

Observations, based upon one thousand urinary charts, prove conclusively that the presence of albumin and even a moderate number of hyaline casts does not contraindicate an operation on account of the kidney disease *per se.*

An elective operation, however, would not be considered justifiable in a case suffering with marked kidney disease; but in cases suffering from some ailment requiring an operation to save life, even serious kidney disease must not deter the surgeon from giving the patient her only chance.

If the operation can be deferred until the patient's general condition can be improved, one may by this delay be able to supply the grain of resistance which will overcome the invasion of infectious organisms.

The regulation of the patient's bowels is one of the first matters attended to after her admission to the ward. The majority of women are of such a constipated habit that in many cases it may be no easy task to regulate the intestinal function. If the patient is to be kept under observation for a few days, a half-bottle of citrate of magnesia, one pill of aloes, strychnine, and belladonna, or a small dose of liquorice powder, is given, the stronger purgatives being held in reserve in case these are not effective. For the last year we have employed with the greatest success one of the aromatic preparations of cascara sagrada.

The preparation of all patients, regardless of what the operation is to be, is practically the same up to the day before operation.

The evening before operation the patient is permitted to take a light supper. She retires at 8 o'clock, after having taken a dose of from half an ounce to an ounce of salts. If she is extremely nervous, a small dose of sulphonal or one-fourth to one-half grain of codeine is administered.

The following morning, between 5 and 6 o'clock, a simple soapsuds enema is given, and if necessary repeated until the bowels are perfectly evacuated. The importance of completely emptying both the lower and upper bowel cannot be impressed too strongly on the nurse, as this precaution simplifies the operation, making it much easier and eliminating many distressing post-operative complications. A full warm tub-bath, or a bed-bath if the patient is unable to walk to the bath-room, is given, and the patient's hair is plaited in two tight braids. The active preparation of the field of operation is then begun.

From this time on, the refinement of technique is closely observed, the pupil nurses having been drilled by the head nurse and resident in the details of hand-disinfection and the principles underlying the various steps carried out in skin-disinfection.

The patient is placed on a Kelly pad, and the abdomen exposed from pubes to ensiform cartilage and surrounded by clean towels. The abdomen, pubes, and upper parts of thighs are then thoroughly lathered with green soap, which is well rubbed in with mops made of non-absorbent cotton enclosed in a gauze envelope.

The field of operation, and the surrounding skin surfaces, are shaved, care being observed to remove the supra-pubic hair well down onto the mons veneris, and the hair of the inguinal and femoral regions.

The abdomen is next cleansed with warm water. Up to this stage in the preparation the nurse has not attempted to observe any special precaution in the way of aseptic or antiseptic detail, but now the concluding steps are followed out with great care.

The patient is covered with a warm blanket while the nurse disinfects her hands by the method described further on. Every article to be used in the concluding details is laid out on a small stand, covered with sterile towels, in easy reach of the nurse. Flasks of sterile water and bichloride-of-mercury solution (1 to 1000), sterile gauze pads, packages of towels, alcohol, and ether, are all at hand, so that the nurse need not break her technique by going outside of this field for any article she may need.

After the nurse has disinfected her hands, the patient's chest, sides and thighs are covered with sterile towels. The abdomen is then rinsed with tepid sterile water, followed by a vigorous rubbing with alcohol and then ether with a gauze mop, which removes all fatty and sebaceous matter. The bichloride solution is next applied, after which a large protective sterile gauze shield is placed over the abdomen. This dressing is made of two layers of gauze quilted between two thicknesses of butter-cloth. It projects well over the thighs and up onto the thorax, and is held securely in place by tapes.

At the completion of this preparation the patient is robed in a clean ward gown and given an ounce of sherry. When sent to the operating-room she is dressed in a loose wash wrapper and is wheeled in a chair or on a stretcher to the anesthesia room.

The Operation.—Notwithstanding the fact that a careful physical examination of the chest has been made in the ward, the anesthetizer is not absolved from responsibility, and is required to make a second examination. The pulse is counted and recorded, and the condition of the arteries carefully noted. After an experience of many hundred cases we are convinced that heart lesions are seldom a serious contra-indication to the administration of ether. A valvular lesion, associated with failure in compensation, is of course a bar, as the mere exertion of taking ether is then dangerous. In a great number of cases small murmurs or irregularity of the heart's action are not contra-indications, as the character of the pulse usually improves very perceptibly in such instances.

Of all the assistants in an operation, none has a more responsible position than the anesthetizer—in fact, in many cases his task is the most difficult of all the assistants', as so much depends upon the careful administration of the anesthetic. The supersaturation of a patient with a greater quantity of ether or chloroform than is required for the proper anesthetization is distinctly toxic in its effects, and taxes the emunctories unnecessarily to eliminate it. This is the commonest fault among new anesthetizers.

While the writer was a junior assistant in the surgical wards of Bellevue Hospital, considerable friendly rivalry arose among the anesthetizers as to who could keep a patient under anesthesia the longest time with the least quantity of ether. This rivalry led to the more careful study of the best method of giving ether, and we were all astonished to find what a small amount was required if it were properly administered.

In the gynecological department of the Johns Hopkins Hospital a simple cone is employed in giving ether. A pad made of blotting paper is covered with oiled muslin and enveloped in a clean towel. This is rolled into a cone, into the apex of which a dampened sponge is lightly pushed.

It is Dr. Kelly's rule to place the anesthetizer largely upon his own responsibility; consequently he very rarely makes any suggestion to him during the course of an operation. He believes that the anesthetizer, who should always be a responsible man, is better able to judge of the condition of the patient and regulate the quantity of ether given than is the surgeon, as the attention of the latter is so closely engrossed in many operations that he is unable to follow the progress of the anesthesia and is consequently not a capable judge.

Before beginning the administration of the anesthetic, false teeth and all articles of jewelry are removed.

At first only two or three drachms of ether are placed in the cone, which is held at least nine inches from the face. The patient is told of the various bizarre sensations and queer sounds which will be experienced, so that she may not be frightened when they appear. At first her attention is distracted from the ether as far as possible, and no special instruction is given about her breathing further than to "breathe naturally."

According to our experience, the custom of commanding the patient to breathe deeply, or asking her to accompany you with deep breaths as you count slowly, is to be discountenanced, as under such instruction the inhalation of the vapor will progress nicely until volition is partially abolished, when the breathing stops or becomes irregular and spasmodic, which condition is very difficult to overcome. As an illustration of this statement, I remember anesthetizing a strong, robust young man who belonged to one of the athletic clubs of New York. He had a remarkably good chest expansion, and when I requested him to accompany me as I counted, by taking deep inspirations, he would begin by taking moderately full breaths, gradually increasing in depth as the intoxicating effects of the ether began to be felt, until he would reach a climax like that of the ascending series of Cheyne-Stokes respiration, when he would make a tremendous effort and fill his lungs to their fullest capacity. Sufficient ether would then be taken to abolish volitional efforts, and there would be a succeeding interval between breaths which was alarmingly long. At last he was only anesthetized by letting him recover consciousness and then distracting his attention from his breathing by talking about some athletic event.

By gradually bringing the cone down to the face, and adding frequently small quantities of ether, the stage of excitement may be almost entirely or quite avoided.

As soon as the patient becomes unconscious, ether is pushed until anesthesia is

complete, when the amount of ether is reduced to a minimum and thus maintained throughout the operation.

The ability to judge of the patient's condition comes only with experience. The custom of testing the reflexes by touching the conjunctiva is certainly unnecessary, and is often harmful, as a very painful conjunctivitis may be caused in this way. The complete relaxation of the arms and legs is as reliable a means as any of judging of the stage of the anesthesia

While the anesthetic is being given, the assistants in the operating-room are engaged in preparing for the operation. For personal cleanliness as well as the aseptic relation of the assistants to his surroundings, the outer clothing is removed and a white duck suit and canvas shoes are donned. During an operation the surgeon and first and second assistants wear sterile skull-caps. On entering the operating-room the hands are thoroughly washed with green soap and water, the nails and the cuticle being vigorously scrubbed with a stiff hand-brush for ten minutes. This is the mechanical part of the disinfecting process, and is the most important of all. The chemical part consists in the use of warm saturated solutions of permanganate of potassium and oxalic acid. This method is very efficient, as proved by the experiments of Drs. Welch, Robb, Griskey, and Sherwood. Dr. Sherwood, in a series of bacteriological experiments, proved that the oxalic acid was the active germicide instead of the potassium permanganate. The latter is a germicide, but the real value of this method depends upon the oxalic acid.

Many surgeons raise the objection that the oxalic acid sets up an active irritation of the skin, causing a marked erythema or painful eruption. This unpleasant result may be avoided by quickly rinsing the hands in sterile water or lime-water after the immersion in the oxalic-acid solution.

The method of disinfection as now employed is as follows:

1. Thorough scrubbing of the hands and forearms for ten minutes with soap and water.

2. Immersion in a saturated solution of permanganate of potassium at 110° F. until the skin is a mahogany brown.

3 Decolorization in saturated solution of oxalic acid at a temperature of 110° F.

4. Rinsing in sterile water or lime-water, followed if desired by bichloride-of-mercury solution (1 to 1000).

While the hands are being disinfected, the instruments have been placed by a nurse in a fish-boiler, where they are actively boiled for five minutes in a one-per-cent. sodium-carbonate solution, and then rinsed in cold sterile water. From the wire basket they are distributed to their respective dishes, which have been sterilized by thorough scrubbing and immersion in a solution of bichloride of mercury (1 to 500 or 1000).

Instead of threading the sutures directly into the needles, a carrier of silk is made, which greatly expedites an operation, as it is easy to thread into this loop even in the hurry of an urgent case.

Sponges are still employed, as they seem to fulfill the purpose for which they are required in abdominal surgery better than gauze, especially in the well equipped operating-room where they can be prepared properly. In operations performed in private houses, dry gauze sponges which are sterilized by heat are probably safer.

The method of preparing the sponges is as follows:

1. Reef sponges are pounded with a wooden mallet until freed of gritty particles.

2. Immersed in hydrochloric-acid solution (ʒ ij to the pint) over night.

3. Washed in pure water until the latter is perfectly clear.

4. Immersed for a few minutes in a saturated solution of potassium permanganate.

5. Transferred from the above solution, with sterile hands,* to a saturated solution of oxalic acid, and left there until they are decolorized.

6. Rinsed through sterile water.

7. Immersed in bichloride-of-mercury solution (1 to 1000) for twenty-four hours.

8. Transferred to 1:20 solution of carbolic acid, where they are permanently preserved until ready for use.

A large supply of sponges should be sterilized at one time.

As soon as the patient is well under anesthesia, she is wheeled into the operating-room and placed on a Kelly pad on a Trendelenburg table. Her short Canton-flannel operating jacket is pulled well up on the chest outside of the pad. In every instance the vagina is carefully cleansed in the following manner:

1. Thoroughly washed with green soap and warm water.

2. Douched with a ten-per-cent. creolin

*The hands must be carefully disinfected according to the method above described.

solution, for its detergent and cleansing effect.

3. Further washed with sterile water.

4. Finally douched with bichloride-of-mercury solution (1 to 1000), followed by sterile water.

The researches of Krönig and Menge, of Professor Zweifel's clinic, show that the germicidal action of the vaginal secretion is very marked, and for this reason they recommend that the vaginal cleansing be dispensed with, believing that the secretion can better combat infection than any disinfectants we may employ. So far Dr. Kelly has not felt justified in adopting this suggestion, as the conditions underlying wound-infection during an operation are different from those encountered by a healthy vaginal mucous membrane.

Following the vaginal disinfection, the abdomen is again taken through the same course as that carried out by the nurse in the ward.

Notwithstanding the careful repetition of the cleansing process, cultures of the *Staphylococcus epidermidis albus*, as first demonstrated by Welch, can still be found in the deeper parts of the cuticle. Fortunately for the surgeon and patient, these organisms seldom manifest any pathogenic action, and then rarely produce more than a local suppuration.

The surface disinfection being completed, the patient is enveloped from chest to feet in a celiotomy sheet with a square hole cut in the middle, of sufficient size to permit free manipulation.

The operation is begun by making a short incision to allow a careful examination of the abdominal and pelvic organs, and if then found necessary the cut is made sufficiently long to give the operator an abundance of room, as the length of an incision plays no part in the mortality in abdominal cases.

A study of the results in our cases seems to show that it is immaterial whether we go down on the line of the linea alba, or off to the side through the rectus abdominalis muscle. Dr. Kelly, however, favors the central incision.

After the abdomen is opened, the loss of even a small quantity of blood is carefully guarded against, on account of the dangers of shock. Dr. Halsted believes that in the vast majority of cases shock merely means that there has been too much hemorrhage. Certainly, in an experience of many hundred abdominal cases, the writer has not seen at the outside five cases that could be diagnosed as simple shock, coming on after the patient had been returned to the ward. On the contrary, the diagnosis of post-operative hemorrhage has been made in these cases, and the abdomen reopened and bleeding invariably discovered.

For small vessels in the abdominal wall and in adherent areas, torsion is always employed to control the hemorrhage. A recent paper of Martin's deals with this question in a most instructive way. It is unquestionably desirable to use as few ligatures as possible, and many bleeding-points which are usually tied could be controlled by the simpler means.

Next to torsion, the best means of controlling hemorrhage is by an absorbable animal ligature. It cannot be gainsaid that this form of ligature is better than the non-absorbable materials.

A serious outbreak of sepsis occurred in 1891 in the Gynecological Department after the use of a lot of catgut, towards which as the infecting agent circumstantial evidence pointed so strongly as practically to condemn it. The use of catgut was then suspended until 1894, when Krönig introduced the *cumol* method of sterilization. This at last seemed to be an unassailable method, and Dr. Kelly adopted it. A careful bacteriological review, by Dr. Miller and the writer, of all the steps, showed a few details yet to be perfected before it could stand the scientific test. The principle, however, stood, and to Krönig belongs all credit for devising a method of sterilization which, with slight modifications, is perfectly trustworthy.

Krönig's method as modified by Dr. Miller and myself is as follows:*

1. Cut the catgut into the desired lengths, and roll twelve strands in a figure-of-eight form, and tie, so that it may be slipped into a large test tube.

2. Bring the catgut gradually up to a temperature of 80° C. in a hot-air oven, and hold at this point one hour.

3. Place the catgut in cumol, surrounded by a sand bath, and raise the temperature to 165° C. and maintain it at this point for one hour.

4. Pour off the cumol, and either allow the heat of the sand bath to dry the catgut, or transfer it to a hot-air oven at a temperature of 100° C. until all of the cumol is driven off.

5. Transfer the rings with sterile forceps to test tubes previously sterilized as in the laboratory.

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* It would be advisable, before attempting to use this method, to read the article by Dr. Miller and the writer, published in the *Johns Hopkins Hospital Bulletin*, Nos. 59 and 60, 1896.

Catgut is now used for the ligation of all vessels except the larger trunks such as the ovarian and uterine arteries. As a subcutaneous suture it is practically ideal, as it invariably holds the skin in perfect apposition until union has taken place.

The writer has observed a long series of cases in which silk was used entirely for suture and ligation, and an equal number of cases in which catgut was employed, and there was a much greater uniformity of good results in the latter than in the former. With regard to stitch abscess, there has been a marked improvement—this troublesome complication rarely occurring now, whereas it was not infrequent when silk was exclusively used.

Next in importance to controlling hemorrhage, and dependent upon it, is the necessity of leaving a clean field behind, so that the micro-organisms which will unquestionably be present even under the most careful technique may have no culture bed upon which to thrive. All debris and blood should be removed, and as far as possible all denuded areas covered with healthy peritoneum. By observing this precaution, all supposed necessity for drainage is removed and the chances for an ideal recovery greatly enhanced.

If the peritoneum becomes contaminated, we do not hesitate to irrigate the peritoneal cavity thoroughly with normal salt solution, 0.6 per cent., at a temperature of 110° F., in this way removing and distributing infectious matter throughout the peritoneal cavity, thus giving the healthy peritoneum an ample opportunity to take up and eliminate toxic substances as rapidly as possible through the lymphatics. Instead of the peritoneum being a feeble organ easily overpowered by the slightest amount of infectious matter, it is capable of the most remarkable work in eliminating poisonous substances. The classical work of Wagner on the function of the peritoneum, followed by the researches of Pawlosky and others, has definitely settled this question. When the patient is depressed by a prolonged operation, a liter of salt solution may be left in the abdominal cavity to excellent purpose, as it will be absorbed rapidly and acts as a good stimulant.

The method of suturing the abdominal wall has been a subject for discussion for many years. An article by Edebohls in the *New York Journal of Gynecology and Obstetrics*, describing his method, is among the best of the recent publications. For the last two years buried silver sutures have been employed in Dr. Kelly's service for closing the muscular layers of the abdominal wall. At the time of Dr. Kelly's adoption of this suture material, Dr. Halsted had been using it in a large series of cases with the best results.

At Dr. Kelly's suggestion the writer made a number of dissections of the abdominal wall with a view of studying the various methods of suture. As a result of this work the following method was adopted:

1. Continuous catgut suture to the peritoneum.
2. Silver mattress sutures, which are passed only through the aponeurosis of the separated recti muscles, and closely twisted five times. The wires are cut smoothly with dull scissors, and the point turned down upon the aponeurosis of the recti muscles, projecting neither upward nor downward.
3. Continuous catgut to the fat.
4. Subcutaneous catgut suture.

The No. 24 sterling silver wire is used. It is sterilized by boiling with the instruments.

More than three hundred abdominal wounds have been closed in this way, and the results have been highly satisfactory. So far, no case of post-operative hernia has followed the method. In a very small number of cases the sutures have caused small fistulous tracks, which necessitated the removal of the wire in five cases. The wounds very rarely suppurate; and in case they do, granulation tissue forms over the wire, and healing as a rule is uninterrupted. In two cases the twisted points of the wires have pointed upward and caused slight irritation.

With regard to the subcutaneous catgut suture I cannot speak too highly, as in many instances the line of superficial union is so perfect as barely to be perceptible. In the negress we have had such ideal healing that the closest inspection was required to detect the site of the incision.

This method of suturing does away with the elaborate abdominal dressings. The wound and surrounding skin is sponged with 1:1000 solution of bichloride of mercury, and dried with gauze. Several layers of the silver foil employed by dentists are then applied over the wound, which makes an occlusive dressing; and over this are laid two thicknesses of absorbent cotton, which is held in place by a Scultetus bandage.

Silver has been proved by Dr. Bolton to have distinct inhibitory action on germ-growth. Tiny bits of silver planted over a plate culture of the pyogenic cocci will show a distinct zone around them where there is

no growth; hence the use of silver foil as a surgical dressing.

Dr. Bloodgood has made a great many observations on the relative value of rubber tissue and silver foil as a protective dressing. Under the rubber tissue, cultures of the *Staphylococcus epidermidis albus* can nearly always be obtained after a few hours, while under the silver dressing this micro-organism can rarely be found.

With the adoption of this method of suture and simple protective, all the terrors to the patient of surgical dressings and removal of sutures disappeared—which means a great relief to a nervous woman. From the time of operation the dressing remains undisturbed until it is removed on the tenth day, when the catgut sutures have become absorbed.

The best means of preventing shock is by carefully guarding against the loss of blood, the judicious administration of ether, and last but not least the conservation of the patient's body temperature. The latter precaution has been proved by Victor Horsley, in his brain operations upon monkeys, to be the best preventive measure of all. If an operation is likely to be prolonged or the patient is in an enfeebled condition, long hot-water bags, devised by Dr. Kelly, are of the greatest service in keeping up the external heat. They may be laid alongside the patient's body or legs, or across the chest.

After the abdominal dressing is applied, the patient is elevated to the medium high Trendelenburg posture, and a liter of warm salt solution (0.6 per cent.) injected well up into the sigmoid flexure. In order that the patient may retain the enema, *she must yet be under the anesthetic when it is given*, otherwise the bowel will not tolerate such a large quantity of fluid. For this reason it is impossible to give liquids by the lower bowel in sufficient quantities in the conscious subject to be of any great service in assuaging thirst.

This means of alleviating thirst was first employed two years ago and has proved remarkably effective. The consuming thirst, which is so great at times as to remind one of the suffering of the Sahara traveler deprived of water, is entirely prevented, and in many instances the patient will pass her first twelve hours after operation without even asking for water. The increase in the urinary excretion also prevents to a large extent the annoying vesical irritability and retention of urine so frequently suffered by these patients.

At the conclusion of the operation the surgical assistants busy themselves with the preparations for the succeeding case. The instruments are collected and carefully rinsed at the hot-water tap, after which they are again boiled for five minutes. The dishes are rinsed in filtered tap-water and immersed in a 1:1000 solution of corrosive sublimate for fifteen minutes. The rest of the preparation is the same as described in the preceding pages.

If the case just operated upon has been an infected one, all abdominal cases are postponed until the next day. Following virulent infected cases, even a greater space of time should intervene; for the observation of Zweifel has been confirmed by the experience of many others—that even after the most thorough means of disinfection, organisms may remain concealed on the hands which can bring the direst results if an operation is engaged in for many hours afterwards. Time is the best disinfectant in such instances.

At the conclusion of the last operation for the day, the cleansing of the instruments is first attended to. They are collected together; the blades of the knives are protected with cotton sheaths, the needles wrapped in gauze, and all are boiled for five minutes, after which they are lifted in the wire basket from the fish-boiler, and plain boiling water is thrown over them to wash away the sodium-carbonate solution. The paired instruments are separated, carefully dried with a soft towel, and laid on a clean towel. If the metal is tarnished, a fine grade of sapolio is used to brighten it. As soon as the nickel begins to flake off, the instrument is sent to the instrument-maker for replating. The knives are dried and placed in small sacks. When all are dried, the paired instruments are carefully matched; the artery-forceps, lightly clasped, are placed six in a bunch on key-rings; and all are laid in their appropriate places on the glass shelves of the instrument-case.

The nurse now proceeds to replenish the surgical supplies depleted by the day's operations.

Towels are made up in bunches of ten each and closely enveloped in another towel.

Gauze is cut into sizes varying from a meter square to small pads (the first size is one meter, the second a half-meter, and the last a quarter of a meter), and these pieces are made up into bundles of fixed numbers and placed in a canvas bag.

Small bolsters, $7 \times 3 \times 2$ centimeters in size, are made of non-absorbent cotton and enveloped in gauze. These bolsters are of the

greatest service in retaining the intestines in the upper abdomen during a pelvic operation.

The small mops used in cleansing the abdomen are also made in a similar way.

Silk sutures of varying sizes are cut in lengths of 40 centimeters, and ten of these strands are wound on glass spools and placed in glass ignition tubes, which are plugged with raw cotton the same as the culture tubes in the laboratory.

Ten strands of silkworm-gut are loosely doubled and placed in an ignition tube.

For convenience in sterilization, the tubes are all held in a wire basket.

When the ligatures and dressings are all ready they are packed loosely together in the large steam sterilizer.

The copper reservoir is so arranged that the live steam is carried into it from the steam-heating plant of the hospital. The sterilizing process is continued for one hour, when the lid of the sterilizer is lifted and the free steam turned from the reservoir into a coil of pipe encircling the interior, thus thoroughly drying in a short time the damp articles.

All ligatures and dressings which are to be kept in stock are sterilized by the fractional method, one hour the first day, and a half-hour on each of two succeeding days.

Dressings which are to be used immediately are only sterilized once.

In all of the preparations, chemical germicides as far as possible are discarded, heat being the most effective and easily applied.

Salt solution is made by dissolving six grammes of table salt in a liter of pure water, which is then filtered through druggists' filter paper into flasks of two liters' capacity. A plug of raw cotton is loosely enveloped in gauze and pushed into the neck of the flask, and the overhanging part of the gauze brought up over the cotton and bound beneath the flaring rim of the flask as a hood.

After the completion of the operation a clean night-gown is placed upon the patient, warm blankets are tucked about her, and she is taken immediately to the ward, where her bed has been warmed thoroughly with hot-water cans. When she is placed in bed, the greatest care is observed in disposing these cans about her, otherwise a very serious burn might result.

The case from now on, as a rule, makes an uninterrupted recovery, requiring only good nursing to effect this end. When, however, the operation has been a serious one, the care and responsibility of the surgeon are only just begun, as the most careful judgment is required in the presence of certain post-operative complications which may arise, the patient's life in many instances veritably hanging upon a thread.

The more common of the post-operative complications likely to arise after an abdominal section may, within varying limits, be classified under certain periods. Thus, within the first twenty-four hours great thirst, vomiting, shock or hemorrhage is most likely to occur; from the second to the fifth days, obstinate constipation, tympanites, intestinal obstruction, peritonitis; and from the fifth to the tenth day, stitch-hole abscess and phlebitis.

Thirst may be controlled by the saline enemata; if, however, the fluid is expelled, as is occasionally the case, water in small sips, cracked ice, or small saline enemata may be used to alleviate it.

Vomiting is so common in these cases that it can hardly be considered a complication unless it becomes violent or is prolonged more than twenty-four hours. All food is withheld, and only small sips of hot water or very cold water are permitted. If this does not relieve, then a number of remedies are tried in succession. A mustard plaster over the epigastrium, hot or cold water bags to the nape of the neck, twenty drops of a five-per-cent. solution of cocaine, cerium oxalate in one-grain pill, or chloroform-water, may be tried with hope of relief. All of these may fail to check the vomiting, and the patient continue to have the most aggravating nausea and retching for two or three days; under which circumstance this complication becomes very serious. Rectal feeding must be the only means of alimentation, and in a few persistent cases we have resorted to lavage with great success. Minute doses of calomel or of morphine have also proved of value in some cases. When the vomiting is persistent, it usually indicates the onset of peritonitis or intestinal obstruction, although tympanites may be the cause of it.

The treatment of tympanites consists in the free administration of purgatives, usually calomel or salts, large high enemata, and the insertion of a rectal tube well up into the colon. The very light application of the Paquelin cautery has been of the greatest value in many cases. The relief attending its use in very obstinate cases has been so signal that we now employ it at the very beginning of the attack. The platinum point

is heated to a dull red, and so lightly applied that it makes, not a distinct burn, but a decided erythema. To do this properly requires considerable skill. The cautery handle is grasped lightly and passed to and fro over the skin, just touching the tips of the short hairs on the abdomen.

The differential points in diagnosis are as a rule very characteristic and easily recognized. In some instances the onset of the symptoms of virulent infection (peritonitis mycotica) is so abrupt as to closely simulate those of hemorrhage, the rapidly ascending pulse-rate and great depression of the patient having such slight shades of difference as to make an absolute differential diagnosis impossible. Under these circumstances the incision should be slightly opened, which may be done without moving the patient from her bed.

If there is hemorrhage, the patient may be hurried at once to the operating-room, if in the judgment of the surgeon she will stand the transportation, as the facilities of the operating-room are so much better than the hurried and incomplete arrangements at the patient's bedside which render a secondary operation very difficult. A definite routine method in controlling the bleeding-point will save time, and saving time means the preservation of the patient's life If the pelvic cavity is filled with blood, no time should be wasted in attempts to sponge it out, as the formation of the clots may have checked the hemorrhage and if dislodged more serious bleeding commences which may end the patient's life while the surgeon is vainly attempting to clear the field and find the bleeding-point. A thorough knowledge of the topographical anatomy now comes into play, as all localities where the large arteries are located must be clamped. The best plan is to begin by clamping the ovarian and then the uterine arteries of one side, and then those of the opposite side, after which the fluid blood and clots may be sponged out. The clamps are then detached one at a time, and the tissues closely inspected for any oozing-point. If the hemorrhage is a general one arising from many oozing-points, a gauze pack must be closely applied.

While the surgeon is at work, every measure for the restoration of the patient must be employed. During 1892 and 1893 infusion of saline solution into the radial artery was resorted to; later this was abandoned and the injection of saline solution under the mammary gland was substituted, as it is so much easier and safer and the results are quite as good. The mammary gland is grasped and lifted up from the chest, while a large aspirating needle, which is connected by rubber tubing to a bottle containing the salt solution, is thrust underneath the breast at its most dependent part. By elevating the bottle containing the salt solution to a height of four or five feet, sufficient pressure is obtained to force the fluid slowly into the tissue. The breast gradually distends until it is very tense, and in some cases the salt solution will spurt from the nipple. A half-liter can with safety be injected under each breast. The effect of the salt solution is soon noticed in the greater volume and slowing of the pulse-rate. Strychnine in the dose of $\frac{1}{60}$ to $\frac{1}{40}$ grain every two hours, and a stimulant enema consisting of thirty grains of carbonate of ammonia, two ounces of brandy, and a half-liter of salt solution, are given. External heat is carefully maintained.

Hemorrhage is most likely to occur in the first twenty-four hours, after which the danger rapidly decreases, as even the dislodgment of a ligature after this time is not likely to be followed by bleeding.

Next in the course of the case comes the danger of septic infection, which may first manifest itself in the virulent form by rapid increase in the pulse rhythm and collapse of the patient. These are the cases of peritonitis mycotica in which the toxic effect of the micro-organisms is so great that the patient is overwhelmed with poison and dies within a few hours. Such cases are entirely beyond the pale of any remedy, and all we can do is to use stimulants freely, hoping that the system may be able to overcome the poison.

In the less virulent cases, where the peritonitis is of the purulent type (peritonitis purulenta), the prognosis is very grave, but much better than in the virulent form. The careful experimental work of Pawlosky on the etiology of peritonitis points strongly to the necessity of giving these patients their best chance to recover by opening the abdomen and thoroughly irrigating it, following with the introduction of a copious gauze drain. The peritoneum is overwhelmed and its function destroyed by the blocking of the lymphatics with inflammatory products and micro-organisms, precluding the possibility of getting rid of the accumulating pus.

Intestinal obstruction may come on at any time, and little time should be lost after its symptoms appear before a secondary operation is performed. It is hazardous to wait in

the hope that the repetition of drastic purgatives or rectal enemata will bring relief.

Stitch-hole abscesses are treated with large flaxseed poultices made up with 1:1000 solution of bichloride of mercury until localization of the pus takes place, when they are freely opened. Subsequently the abscess cavity is kept clean with boric-acid irrigations and peroxide of hydrogen. Unless the wound is sluggish in healing, the silver sutures are not removed, as the granulation tissue will form over them and a perfect cicatrix result.

Phlebitis is treated by lightly touching the line over the inflamed vein with a Paquelin cautery, after which the leg is elevated and enveloped in rolls of cotton and a gauze bandage.

A few words as to the after-care of an uncomplicated case.

For the first three or four hours after the patient is returned to the bed the nurse keeps a close watch over her, gently restraining her if she attempts to get out of bed or use any undue exertion as she recovers from the anesthetic.

In serious cases a record is made of the pulse every fifteen minutes.

A special chart is started by the nurse, which is kept up for eight days. Careful notes are made under the following headings: temperature; pulse; sleep; urine; stool; medicine; stimulant; nourishment; remarks.

For the first three or four hours no foods or liquids are given; if at the end of this time the patient is not nauseated, albumen-water in two-drachm doses, with a like quantity of champagne, is permitted. The quantity is gradually increased to two ounces every two hours.

Liquid diet, consisting of albumen-water, milk, and broths, is maintained for five days, when the patient is put upon soft diet, which includes soft-boiled or poached eggs, milk toast, meat and fruit jellies.

At the end of ten days the patient resumes the ward diet.

The evening of the second day after operation, calomel is given in the dose of one-half grain, repeated every half-hour until two grains are given, followed the next morning by a simple enema. Should this not prove effective, an enema consisting of two ounces of olive oil, one ounce of glycerin, and one drachm of turpentine, is given. In rare instances the intestinal stasis has been so obstinate as to require elaterium or other drastic purgatives; these must be employed with great care.

Dr. Hare has said that some surgeons have bad results not because they operate poorly, but because they fail in the post-operative treatment and care of patients.

If the patient is able to void her urine, it is highly desirable to allow her to do so, as catheterization even under the most careful precautions is fraught with danger; but many patients have retention of urine for the first day or more. For each patient there is a special receptacle for her catheter, which is sterilized by boiling before use. The urethral orifice is carefully sponged with a wet boric pad, and the labia separated with sterile pledgets of cotton while the catheter is introduced.

Patients are permitted to sit up in bed from the twelfth to the eighteenth day, get out of bed on the eighteenth, and leave the hospital from the twenty-first to the thirtieth day. A neat-fitting bandage is worn from the time the patient gets out of bed until she can discard it with comfort. This is not advised because of any supposed value in preventing hernia, but is simply for the personal comfort of the patient.

On the day of discharge a careful pelvic examination is made and noted. A final examination of the urine is also recorded.

This completes the cycle of the patient's existence in the hospital, and she is discharged with whatever advice or remedies may be required to complete her recovery, with the request that she keep the resident gynecologist informed as to her progress.

In conclusion I wish to thank Dr. Kelly for his permission to describe the surgical details carried out in the Gynecological Department, all of which have been originated or adopted under his careful oversight.

EXTERNAL URETHROTOMY AND SUTURE IN RUPTURE OF THE URETHRA.

A. T. Cabot says that in cases of ruptured urethra, immediate perineal section with suture of the urethra should be practiced. By this procedure not only do we greatly lessen the danger of urinary infiltration and abscess, but we also, in a large proportion of cases, may hope to prevent formation of close intractable strictures. In an early operation the search for the posterior end of the urethra is much easier than it is later. The hemorrhage from the branches of the artery of the bulb serves as a guide to that end of the canal.

The Therapeutic Gazette

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Leading Articles.

THE VALUE OF AEROTHERAPY IN THE TREATMENT OF DISEASE.

There is no doubt whatever that at the present time physicians are inclined to rely too much upon medicinal treatment and to ignore the good effects which can be induced by outdoor exercise, Swedish movements, massage, and climatic change, in the treatment of disease. On the other hand it can be said with truth that in many instances most of these remedial measures cannot be resorted to because the patient cannot leave his business or has not the means which will enable him to seek those climates, mineral springs, or other remedial agents far from home, which are most indicated by his condition. No physician exists in active practice who does not meet with cases which would be benefited by a trip abroad or to the mountains of Colorado or the plains of Arizona, and who at the same time does not find that his professional opinion is hampered by the inability of the patient to do as he suggests.

For this reason it seems important to us that some of the methods which can be employed at home for the improvement of the general health, and particularly the health of the thoracic organs, should receive more attention. It is true that in a few institutions in this country and abroad there exist the so-called pneumatic cabinets in which, by means of air-pumps, the patient may be exposed to compressed or rarefied air, with the result that his pulmonary circulation and general health are improved; but the expense of these cabinets, the difficulty of their manipulation, and a lack of knowledge concerning their influences, prevent their general employment. We come, therefore, to the consideration of the cheaper and more readily provided methods which almost every physician can employ, even although his client's means be very limited.

Great improvement may be produced in the expansion of the lungs, in the action of the heart, and in the general nutrition, by a simple exercise that may be carried out in the most humble home. The patient is directed to stand perfectly erect for a period of two to five minutes, morning and night, with shoulder-blades pressed against a wall, and then to make, slowly and regularly, deep inspirations and expirations, moving his arms from his sides up to a level with his shoulders, or even bringing his hands together above his head, with the arms fully extended. It is necessary to impress the patient with the fact that during this procedure he must hold himself as erect as possible, and that both the expirations and the inspirations should be prolonged and absolutely devoid of any jerking movement.

At first it will be found that these deep pulmonary inflations cause slight vertigo or faintness, which is but another evidence of the fact that the patient's thoracic viscera have become unaccustomed to a proper expansion of the chest-walls; and in the course of a few days, or even after the first day of treatment, the patient may become alarmed by more or less severe pains in his chest, which he believes to be an evidence of pulmonary disease. As a matter of fact, the pains are but due to the unusual, yet very proper, stretching and exercise of the muscles of respiration, and while they may be disagreeable the patient can be assured that they need give him no alarm, and that a persistence in his exercise will do him great good. Such an exercise will be found of great value in those persons who, because of their indoor occupations, get little exercise and are troubled as a result with impaired

digestion and poor circulation, a constant tendency to colds which fasten upon their respiratory apparatus, or who may even go so far as to be very liable to, or actually infected by, the bacillus of tuberculosis. If a measurement be taken of the circumference of the patient's chest before this treatment, and another one after it has been carried out for a month, the physician and the patient will be pleased to note the increased respiratory capacity and the general improvement in health.

Another method of pulmonary inflation which is useful, not only in the cases we have named, but in those in which, following a pneumonia, there is an imperfect return to the healthy condition of the lung, is the use of two ordinary Wolff bottles joined by a piece of tubing in the manner about to be described. In other instances it is useful in cases in which, after a pleural effusion or empyema, the lung does not expand and fill the chest-cavity as it should. Two wash-bottles partly filled with water are joined together by means of rubber tubing which is attached to a glass tube reaching to the bottom of each bottle. Fastened to the rubber tube is a pair of artery-forceps. A little piece of paper, divided into a scale showing the fractions of an inch, is then pasted upon the side of each bottle. By means of another tube connected with the top of a second glass tube in the first bottle, the patient blows gently into this bottle and thereby forces the liquid from it into the second bottle. As soon as he has exhausted the air in his chest by this gradual expiration into the first bottle, the artery-forceps are closed upon the rubber tube, thereby preventing the return of the displaced water; and by means of the scale on the side of the bottle a record may be made of the quantity of water he has been able to displace by one forcible expiration.

If a daily record is kept, it will usually be found at the end of two or three weeks that the quantity of water displaced by a single pulmonary expiration is greatly increased, and, simultaneously with this increase, an examination of the chest will reveal not only a better expansion of the entire thorax, but the fact that the air passes more freely through the area of the lung, which was partly consolidated or thickened; or, if the case has been one of pleural effusion, that the lung contained in the pleural cavity affected is gradually acquiring a normal expansion.

This method is particularly useful in cases of empyema where drainage has been found necessary. These cases often have, in addition to liquid in the pleural cavity, a considerable quantity of air which must be displaced through the drainage opening or be removed through a gradual process of absorption—a process which is distinctly aided by the pulmonary gymnastics just described. Here, again, it is of vital importance to impress upon the patient the necessity of performing all the movements required in a regular and gentle manner, since it is possible by a sudden expiratory or inspiratory effort to do serious harm to the lung which has been weakened through the presence of a pneumonia or a pleurisy. In other words, these exercises are resorted to with practically the same object in view as when Swedish movements are employed for the purpose of limbering up a joint which has been inflamed as a result of a traumatism or disease. Gentle and gradually increasing movements of a stiff knee will often restore to it its function; whereas any sudden, violent wrench of the part may do more harm than can ever be repaired. So, in a lung, gradual pulmonary exercise is of advantage, but any sudden wrenching of the pulmonary air-vesicles or the visceral layer of the pleura may be disastrous.

Doubtless some of the directions which have been given in this article will seem of comparatively little importance and almost homely in their character, but we are convinced from practical experience that even such readily performed modifications of the more complicated forms of aërotherapy will bring to the physician and his patient results the value of which he has no conception of unless he has given these methods careful and repeated trial.

POISONING BY CANNABIS INDICA.

There are very few drugs which in their active preparations possess such power upon the human body as does cannabis indica, and which at the same time so rarely produce dangerous symptoms, even when taken in excessive doses. Our attention has been called to this fact not only by personal experience in the use of cannabis indica, but also by the fact that although medical literature from time to time contains records of poisoning by this drug, so far as we know there is no instance on record in which death has resulted from its ingestion.

In the experience of the writer of this article, it is by no means uncommon for medical students to indulge in the amusement of poisoning themselves or their friends with excessive doses of this drug, yet in no one of these instances has serious effect resulted over and above the alarm of the friends of the patient at his condition.

Attention has once more been called to this matter by a report by Geiser, in the *Medical Record* of October 10, 1896, of a woman aged fifty-seven who began by taking five minims of "normal liquid" cannabis indica, this dose being increased about five weeks later to seven minims. It is probable that the first sample dispensed was not "normal liquid" cannabis indica, but a preparation possessing far less power, and perhaps no power at all. Upon the patient taking the first dose of the second purchase, which contained seven drops of the drug, she became somewhat faint, with a feeling of numbness and tingling over the entire body, and some dyspnea. Within a few minutes she was seen by her physician, who found her with a staring expression and looking somewhat anxious. The dyspnea grew worse and the patient felt as if she had lost all power over her limbs, and on two or three occasions seemed to lose consciousness. Once or twice, in order to facilitate her breathing, it was found necessary to raise her from her recumbent posture. To revive the feeble circulation, it was necessary to give her strychnine as a stimulant. Apomorphine was also given hypodermically to produce emesis, and this speedily relieved her stomach of its contents. Perfect recovery from the effects of the poison ultimately occurred.

Considering the fact that some preparations of cannabis indica are absolutely inert, and that reliable preparations of it, such as "normal liquid" cannabis indica, are known to possess a very definite medicinal influence, and that there are other preparations upon the market which undoubtedly have medicinal power, it is curious that more serious effects have not been reported from its careless administration to persons who, like the one referred to above, are in a condition of feebleness; and we think it strong evidence of the safety of this powerful remedy that among all the persons, feeble and otherwise, who have received it in full doses, not a single death from its use is recorded.

Further than this, considering its power of relieving pain and of quieting nervous excitement, it is surprising that the remedy so seldom if ever tends to produce what might be called a "cannabis indica habit." For these two reasons, therefore—its harmlessness as a poison, and its lack of power to produce a habit—it seems to us that physicians should more frequently resort to some reliable preparation of Indian hemp, such as the authentic "normal liquid," for the alleviation of excessive cough, for minor aches and pains, particularly when associated with rheumatic affections, and as a nervous sedative in those instances in which the use of bromides or chloral is inadvisable.

THE LOCAL TREATMENT OF GOUT.

For American citizens it is a fortunate fact that we suffer far less from gout in its severe manifestations than our English cousins. Yet it is undeniable that physicians in active practice, particularly in the eastern portions of the United States, from time to time meet with cases of acquired or hereditary gout which, in many respects if not in all, follow the symptoms with which English physicians are so familiar. It is also an unfortunate fact that in the advances of medical science we have gained but little information in regard to the pathology and therapeutics of this disease, and there exists to-day no efficient remedy for the acute or subacute manifestations of gout, unless it be the use of almost dangerous doses of colchicum in the first instance, or of ascending doses of arsenic in the second.

Our attention has been called to this subject by an article by Dr. William Murrell, of London, who tells us that in the treatment of gout he uses a local application made as follows: Half a drachm of iodide of potassium is dissolved in half an ounce of rectified spirit, and to this is added one ounce of soap liniment; finally, to complete the mixture, thirty minims of the oil of cajuput and thirty minims of the oil of cloves are added; and, after all these ingredients have been thoroughly mixed by shaking, a piece of lint is soaked with the mixture, wrapped about the inflamed joint, covered with a piece of protective material, and kept in place by a bandage. As a result of this application, a powerful counter-irritant influence is induced, and Murrell asserts that the inflammation usually subsides in from twelve to twenty-four hours.

He then proceeds to tell us that in addition he not infrequently gives as much as one teaspoonful of colchicum wine with ten grains

of iodide of potassium three times a day, and that these full doses of colchicum speedily produce brisk purgation and sometimes vomiting, but invariably cut short the attack. He believes that this treatment is of value in those who are robust and following some active occupation in life, and who are willing, rather than lose a day's work, to submit to somewhat heroic treatment.

There can be no doubt that most practitioners of medicine who have had experience in the treatment of this disease have found, as has Dr. Murrell, that these full doses of colchicum wine produce the gastro-intestinal disturbances which he has named, and very frequently relieve the gouty manifestations for which they were given. At the same time it seems proper not to let this recommendation pass without calling attention to another fact which we think is not sufficiently emphasized by Dr. Murrell, namely, that these full doses of colchicum may induce that dangerous condition which is known as "retrocedent gout," in which the gouty inflammation leaves the joint where it has been chiefly manifested and attacks important viscera in the abdominal cavity. It is true that this accident does not happen with great frequency, and it is also true that some patients may be willing to run the risk of such a complication rather than suffer the pain and inconvenience of the ordinary attack, but at the same time the possibility of this accident should, we think, always be present in the mind of the physician who is tempted to be heroic in his use of colchicum in this affection.

Another recommendation of Dr. Murrell's, against which no such argument can be used, is the liniment which he suggests for use in the treatment of sciatica, lumbago, and muscular rheumatism, or even the rheumatism which involves but one or two joints. The liniment is made up as follows: Half an ounce of salicylate of sodium, half a drachm of oil of cajuput, fifteen minims of oil of eucalyptus, half an ounce of soap liniment, six ounces of rectified spirit. It may be rubbed upon the inflamed part, or kept in contact with it by means of lint and a compress in the manner which we have already described.

SERUM THERAPY OF URINARY INFECTION.

Strictly in line with the series of researches having for their end the discovery of a substance which may protect the system from invasion by micro-organisms, is the contribution of Albarran and Mosny (*Annales des Maladies des Organes Genito-Urinaires*, October, 1896) detailing the results of their experiments with substances which inhibit the growth or the toxic effects of the colon bacillus group—germs which are operative in producing the toxemia which is so often fatal after operations upon the urinary tract. Serums have already been prepared which protect against diphtheria and tetanus, and claims have been made for the immunizing power of a similar substance against the streptococcus and staphylococcus of ordinary suppuration. The research of Albarran and Mosny is the first which has been conducted for the purpose of discovering an antidote to the colon bacillus. The importance of such a discovery can scarcely be exaggerated. The large percentage of deaths occurring in urinary surgery are due to toxemia, and it is well known that a fatal result from this cause may follow even the simplest and most carefully conducted mechanical intervention, such, for instance, as the passage of a sound. Heretofore there has been no certain means of preventing systemic infection, though rigid antisepsis and irrigations of the portions of the tract operated on have done much to render such infection less frequent.

Albarran and Mosny first attempted to render animals immune to the virulent cultures of the colon bacillus by repeated inoculations of live cultures enfeebled by age or heat, or administered in small doses. They found this method uncertain. Non-virulent cultures did not confer positive and lasting immunity; and virulent cultures were always likely to kill the animals. Guinea-pigs seemed to be particularly susceptible to the poisoning. Rabbits could be immunized in this way, but the process required extreme care. In dogs, vaccination by repeated inoculations of virulent cultures, steadily increasing the dose, produced absolute immunity. Occasionally, when the inoculations were made beneath the skin, large abscesses were formed. The peritoneum of dogs is, however, not highly vulnerable, and intra-peritoneal injections were most successful.

The next method tried was vaccination by inoculation of the filtrates from macerated organs of animals which had died from infection of the colon bacillus. These filtrates were always toxic. The symptoms of poisoning were transitory, the animals rapidly recovering, when the doses were small. There was always an immediate and marked eleva-

tion of temperature, followed by emaciation and often albuminuria. A dose of one cubic centimeter of the filtrate vaccinated a guinea-pig against double the fatal dose of virulent culture inoculated twenty-four hours after. Repeated doses of the filtrate immunized rabbits more certainly than living cultures, and enabled these animals to withstand more than twenty times the fatal dose of the culture. In dogs the same immunization was obtained.

Finally, animals were vaccinated by alternate inoculations of the filtrates and of living cultures. This was done because it was apparent that animals vaccinated by living cultures furnished a serum which possessed anti-infectious properties, while serum of animals vaccinated by the filtrate was particularly antitoxic. Each virulent inoculation was preceded by inoculation with the filtrate. As a result of this treatment the animals were able to withstand enormous doses of the most virulent cultures.

The toxins of the colon bacillus were isolated from the cultures by filtration through a Chamberlain cell. Intra-venous injections of these toxins killed animals in a few hours, sometimes not for several days. In the cases of rapid death there was immediate elevation of temperature, which persisted. When the animals lived for some time the temperature often dropped below normal, remaining low for several days and then rising to normal or above. Animals died either with normal temperature or exhibiting hyperpyrexia. In several cases inoculation was followed by immediate elevation of temperature, which shortly dropped to normal. This hyperpyrexia following inoculation with the toxins strictly conforms to the clinical picture of urinary infection. Many patients whose urine contains the colon bacillus in almost pure colonies exhibit normal temperature until some surgical intervention is attempted, such as internal urethrotomy. This causes solution in the continuity of the mucous membrane, and immediately after the first micturition chill and fever supervene, indicating absorption from the surface of the wound.

Together with hyperpyrexia, there was always noted in animals rapid emaciation. This toxin, in place of protecting rabbits against the action of living cultures, seemed to predispose them to infection and hastened their death. When the toxins were injected into rabbits vaccinated by repeated inoculations, they caused death. When they were injected into rabbits vaccinated by the alternate method, the animals resisted the poison.

The serum of vaccinated animals was carefully studied as to its anti-infectious power. In rabbits the best serum was obtained by the alternate method of vaccination. This serum immunized guinea-pigs in doses of one-tenth of a cubic centimeter. Serum of dogs immunized by the alternate method was found to be extremely active, since a mixture of .005 Cc. of this serum with a fatal dose of the culture, when injected into a guinea-pig, did not cause death. Guinea-pigs infected with double the fatal dose of the culture survived when two hours after the infecting inoculation they received two cubic centimeters of the protecting serum.

As to the antitoxic effect, the serum of rabbits vaccinated by the alternate method exhibited very slight antitoxic power, but marked influence in preventing infection. When the rabbit was vaccinated by repeated inoculation with the filtrate, the serum was markedly antitoxic but very slightly anti-infectious. These results make it evident that in serum of vaccinated animals it is essential that a distinction should be drawn between the anti-infectious and the antitoxic properties of the serum, and that these properties bear a certain definite relation to the methods of vaccination employed. When the animal is vaccinated only by living cultures, its serum is principally anti-infectious. When it has been vaccinated by modified toxins (filtered macerations), the serum is markedly antitoxic. These properties of the serum are confirmed by abundant experimentation.

For three months the experimenters have applied a sero-therapy based upon their experimental research to man, in the service of Guyon. The injections were made not only subcutaneously but into the bladder. This last application was suggested by the fact that a very small quantity of serum mixed with a culture destroys its experimental action. This, they state, is an entirely new application of sero-therapy. Clinical trial of the method has given excellent results, which are to be announced by Guyon. The authors call attention to the fact that urinary infection can in a great number of cases be foreseen—that is, there are many cases in which the surgeon knows beforehand that an operation is likely to cause symptoms of general infection, which exceptionally may be extremely grave. Hence serum therapy would be particularly valuable in urinary surgery, and could be used not only to cure infection

already developed, but to prevent infection when it can be reasonably expected. The authors express the hope that the method of treatment will find many applications in the future, and that the anti-colon-bacillus serum may be utilized in other infections due to this microbe.

These investigations have a very great importance. The wide clinical experience of Albarran and the sound professional judgment of Guyon make any method of treatment which they suggest worthy of notice. It is to be regretted that they have not communicated their clinical experience in detail. Until this is done, it is scarcely fair to judge of the merits of the method proposed. It may be said in passing, however, that the serum therapy of diseases other than those caused by the colon bacillus, in the preliminary reports promised as much or even more, but that the ultimate results have been generally disappointing. The profession will await with great interest Guyon's report of his clinical results.

Reports on Therapeutic Progress

RECOGNITION AND TREATMENT OF PUERPERAL FEVER.

In the London *Lancet* of August 22, 1896, BYERS, after speaking of the general systemic states which predispose to puerperal fever, tells us that in the local treatment of the uterus we have the choice of three methods: (1) simple irrigation; (2) continuous irrigation; and (3) curettage. The plan to be adopted will depend on the condition ascertained by a digital examination.

If the finger finds the cervix markedly patulous, and if on exploring the interior of the uterus one feels any foreign mass (often putrid and foul-smelling), or if there is the sensation of a soft tissue which on pressing with the internal finger seems to break down, then even at this early stage the uterus should be carefully curetted, the indications for this operation at this period being: fetor still persisting after douching the vagina, a patulous cervix, and the detection of some decomposing body in the uterine cavity.

On the other hand, if the endometrium feels normal (that is, if there seems to be no soft tissue breaking down), simple irrigation is called for, with certain precautions in its technique:

1. The gravitation douche, not the syringe, should be used.

2. The intra-uterine tube should be large in order that a good flush may remove any clots, remains of membranes, debris, etc. It should be passed up to the fundus, and the writer has found it a useful plan to seize the anterior lip of the cervix with a volsella so as to steady the uterus and render its cavity straight. In this way the douche-tube is more easily passed up to the top of the cavity of the uterus and every part flushed.

3. The writer prefers for the first douche to use a 1-in-4000 corrosive-sublimate solution unless the patient has renal disease or has suffered from post-partum hemorrhage, when some other antiseptic should be employed, as creolin, lysol, or iodine; it is to be noted, as has been pointed out by Watson-Cheyne, that these antiseptic solutions, if too strong, act deleteriously on tissues already weakened by contact with poisonous products, and thus by causing their death may afford more pabulum for the putrefactive micro-organisms; hence, too powerful antiseptics should not be employed.

4. In douching out the uterus, plenty of fluid should be used; instead of one or two pints, from eight to ten should be employed, and the temperature of the fluid should be 100° to 105° F., as in this way the parts will not be injured and owing to the heat the douche will have a stimulating effect.

5. In douching, care should be taken to see and to examine any membrane, piece of debris, etc., which may come away.

If after this simple irrigation of the uterine cavity the temperature falls suddenly or gradually, the pulse at the same time becoming slower, it need not be repeated. On the other hand, if, after irrigating the uterus, the temperature remains unaffected, or if after a fall it rises the next day, the douche should be used again, and if it brings down the temperature and pulse the case may take a favorable turn. Suppose, however, notwithstanding the repetition of the simple irrigation, the temperature remains unaffected or even rises, and the patient has further rigors, then we must use one of two methods—either continuous irrigation or the curette. Professor Pinard, of Paris, is a strong advocate of continuous irrigation, which he recommends if the temperature remains high on the evening of the third day. He thinks the continuous irrigation of advantage even if afterwards it is decided to curette the uterus, as it renders the endometrium as aseptic as possible; and the rise of temperature and shivering, which the writer has often seen follow curetting,

are either absent or less marked, according to Professor Pinard, if douching has been previously used. The continuous irrigation may be employed for as long as twelve hours or more. Weak carbolic lotion, lysol or boric acid may be used as the antiseptic in such conditions. This continuous irrigation has not received sufficient trial in English obstetric practice; in many cases it has a wonderful effect, and from the Amsterdam clinic Huinereck reports fifty-two cases of puerperal sepsis treated by prolonged irrigation with 1-, 1½- or 2-per-cent. carbolic acid, or a 1-in-4000 corrosive-sublimate solution; following this irrigation the inner surface of the uterus was painted with undiluted tincture of iodine; all those treated in this way recovered.

It may be objected to irrigation of the uterus that (1) the mere surface of the endometrium is affected, hence the organisms on the surface alone are rendered inert, while those deeper in the tissues are not acted upon; (2) repeated douching is often painful and entails considerable disturbance of a patient who is already weak and nervous; and (3) such repeated manipulations may really run the risk of conveying more septic infection. On the other hand, the practical results after this method of treatment are most evident in many cases; and, according to Professor Pinard, it favors the subsequent use of the curette.

There is a type of case occasionally met in which irrigation is of great value, and that is when, owing to the decomposition of a syphilitic fetus, the woman becomes infected before delivery. Here douching out the uterus after labor has begun before dilating the cervix is good practice, and the same method can be used if after delivery the temperature keeps up or if after a fall it again rises. If, however, in spite of this continuous irrigation the patient's condition does not improve, Byers advocates curetting the uterus, an operation which from frequent favorable experience in such cases he can strongly recommend; if the patient is no better on the fourth day it should then be employed, the rationale of its action being that the curette removes any decomposing material and the lining membrane of the uterus in which the bacilli find a suitable culture medium for their growth. If carefully done he has seen no harm accruing to the use of the curette in the post-partum uterus; sometimes the operation may be followed by shivering or slight hemorrhage, but if the uterus is packed with iodoform gauze the risk of bleeding is anticipated. He removes the gauze in twenty-four hours, and if after this the temperature again raises he re-curettes, as the chances are there is something still which needs to be removed from the uterine cavity.

It will be seen that curettage is recommended to be done early in infected cases only under certain conditions which he has mentioned, but as a rule it is better not to employ the curette until irrigation has been first tried. If the uterus is curetted on the fourth day of the patient's illness, it has this advantage in its favor, that the necrosing endometrium is beginning to separate. On the other hand, if examination on the first day of a patient's illness shows that the uterus is empty, the morbid process may be purely local on the surface of the mucous membrane, and the use of the curette will be bad, as we may in this way open up channels by which fresh infection may spread.

In cases in which irrigation and curettage fail, the only other measure we can try is the serum treatment—that is, the injection of the anti-streptococcus serum; but up to the present this plan has not been very successful. At the very interesting discussion which took place at the Obstetrical Society of France in April, 1896, Dr. Charpentier, reporting on cases treated by anti-streptococcus serum, was compelled to admit that the treatment had not so far fulfilled the expectations raised when it was first introduced. Dr. Roux and Dr. Marmorek state that the anti-streptococcus serum can have no effect if, simultaneously with its administration, one continues the use of intra-uterine treatment (injections, swabbings, curettage, etc.), and Dr. Marmorek advises medical men who ask for anti-streptococcus serum to abstain from any other form of treatment; suggestions against which several of those taking part in this discussion strongly protested, Dr. Budin saying he could not understand why they should be told to renounce cleansing the uterus by irrigation, swabbing, and curettage, in favor of a very doubtful measure which promises well for the future, but offers little security for the present.

At the present time the whole question of sero-therapy in the treatment of puerperal infection is still in an experimental stage. It may be the treatment of the future. We want, however, more information as to the action of the serum and the class of cases to which it is suitable. No doubt we may soon acquire this, and the carefully recorded case

of "acute hemorrhagic septicemia treated by anti-streptococcus serum" by Mr. Ballance and Mr. Abbot, with the additional note on the preparation of anti-streptococcus serum by Mr. Bokenham, is of the greatest importance in showing what sero-therapy will do in a bad case of septicemia.

Another method of sero-therapy in the treatment of puerperal septicemia was brought before the Paris Academy of Medicine, on June 30, 1896, by Professor Pozzi, who read a report on a paper by Professor Duret, of Lille, on this subject. This method, which is suitable alike to septicemia following operations as well as in the puerperium, is specially recommended in desperate cases when death is imminent, and consists in intra-venous, followed by hypodermic, injections of sterilized water containing chloride of sodium in the proportion of from 7 to 10 in 1000, at a temperature of 104° F., and of this solution from two to five liters may be injected in the twenty-four hours. The rationale of this treatment is that, in the first place, by raising the intra-vascular pressure it increases the patient's power of resistance, enabling her to carry on the struggle against the disease. In cases of septicemia the blood-making organs thus get time to produce new blood-corpuscles for phagocytosis, and the kidneys, the secretion of which is increased, eliminate the toxins. Care should be taken to see that the kidneys are in good working order before resorting to this method of treatment.

While the writer has experienced the great value of saline injection in cases of severe hemorrhage, he has not tried its use in puerperal septicemia. It will, however, be well worth employing, as Pozzi advises, in desperate cases.

While thus strongly advocating local treatment in puerperal infection, the writer also recommends that every effort be made to keep up the patient's strength by the administration of concentrated nutritious food in a liquid form, quinine, digitalis, strychnine, and alcohol. Of abdominal hysterectomy, as practiced by some of the American profession in puerperal fever, he has no personal knowledge, but when there is any localized mischief in the abdomen surgical interference is of the greatest value.

In conclusion he states that every one engaged in obstetric practice has the duty devolved on him of forestalling and preventing puerperal infection. We have to watch that those who are expecting to be confined shall be in the best possible condition to sustain the exhausting fatigue and risk of child-bearing. Our endeavor should be to prevent by prophylactic measures the onset of infection; but when, in spite of our efforts, this ensues, then, by early recognition of its occurrence and by prompt treatment, he is more and more convinced that not only may the death rate be minimized, but that there shall be less liability to subsequent gynecological disease.

THE ACTION OF STRYCHNINE IN CHLOROFORM COLLAPSE.

The *Union Médicale* of July 11 contains the following abstract from an article by Evenhoff, which was published in *Vratch:* Arrest of the heart is one of the most important causes of collapse during chloroform anesthesia. The paralysis of the vaso-motor centre which is provoked by the latter brings about the rapid fall of the blood-pressure, and this fall, by depriving the cardiac muscle of its excitant, is one of the causes of the arrest of the heart. As the result of experiments, Professor Bobroff proposed making subcutaneous injections of sodium chloride in cases where the pulse was feeble during chloroform anesthesia. Evenhoff's experiments with strychnine were as follows: Tracheotomy was practiced on dogs, and a tube was introduced into the larynx and put in communication with a small bottle which contained chloroform. Artificial respiration was made in such a way that the air passed through the bottle, and it could be charged or not with chloroform. Before chloroformization the pressure was noted; then the air, charged with chloroform, was injected, and, when the pressure fell to zero, pure air was injected and an intra-venous injection of from two to three milligrammes of strychnine was administered. When the pressure finally became normal the animal again received inhalations of chloroform. In this way the action of the chloroform before and after the injection of strychnine was ascertained. The results of these experiments showed that, owing to these injections, dogs which usually tolerated chloroform badly could support the drug without inconvenience for a greater length of time. The favorable action of strychnine on chloroformization was thus demonstrated. Strychnine, however, has two inconveniences: it may possibly provoke a tetanoid attack, and, given in the dose employed by Evenhoff, it increases parenchymatous hemorrhage.—*New York Medical Journal*, August 1, 1896.

TRANSFUSION, INFUSION, AND AUTO-TRANSFUSION; THEIR COMPARATIVE MERITS AND INDICATIONS.

SCHACHNER, in the *Journal of the American Medical Association* of September 12, 1896, contributes a paper with this title. He reaches the following conclusions:

1. In enormous hemorrhages the resulting dangers are more frequently due to the reduced intra vascular pressure than to the actual loss of blood.

2. In view of this the indications point more decidedly towards infusion than transfusion.

3. Transfusion has not received the attention which its merits justify.

4. In transfusion we possess a measure which in the severest hemorrhages is the only agent capable of restoring the vital functions.

5. The indications for transfusion include any condition which reduces the total quantity of blood to a fatal degree, or which alters the character of the blood to such an extent as to render it incapable of sustaining life.

6. When the transfusion is performed for the relief of a poisoned condition of the blood it should be preceded by venesection.

7. Centripetal is to be preferred to centrifugal transfusion.

8. In centripetal transfusion the injection should be made with a slow steady stream, carefully avoiding undue force.

9. In withdrawing the blood from the donor the veins afford an easier, safer, and better source than the arteries.

10. Indirect transfusion with defibrinated blood is safer than direct transfusion with non-defibrinated blood.

11. In alarming hemorrhages infusion should be performed before transfusion; should, however, the improvement be transient in its nature, the infusion must be supplemented by transfusion.

12. In addition to hemorrhages the indications for infusion include any pathologic state attended with a feeble pulse which is dependent upon a relaxed condition and a diminished intra-vascular blood-pressure—namely, shock.

13. Restoring the tone of the circulation by infusion is not wholly dependent upon the increase of the intra-vascular pressure, but is in part due to the stimulating influence which the salt solution has upon the heart.

14. In performing transfusion or infusion after an enormous hemorrhage, the use of an anesthetic is not only unnecessary but absolutely dangerous.

15. In the anto-transfusion we have a valuable measure for combating shock and preventing accidents in anemic subjects during chloroform narcosis.

REMARKS ON THE MANAGEMENT OF GLAUCOMA.

CONNER, of Detroit, in the *Journal of the American Medical Association*, August 29, 1896, first emphasizes the fact that in the management of glaucoma such attention should be given the bowels, skin and kidneys as to secure the most prompt and complete elimination of the effete results of tissue metamorphosis. The diet should be so regulated as to admit only such articles, and in such quantities, as can be perfectly digested. The liberal use of water internally and externally greatly assists in restoring the fluids of the body to a state of reasonable purity. The continuance of such diet and mode of life affords the largest hope of preventing future glaucomatous attacks.

Such medicines should be employed as are called for to remove the constitutional dyscrasia found in cach case, as arthritic, gouty, syphilitic, etc.

In simple glaucoma with no increase of tension such treatment may suffice; but should there develop increased tension, diminished visual field, pain, shallowed anterior chamber, myotics should be first employed (if they can be constantly watched), and if they keep the symptoms under control nothing further is called for. But if they are not well borne, or if at the end of a month the visual field has diminished, then an iridectomy should be done. If the tension still persists, a sclerotomy should be performed and myotics again employed.

In acute inflammatory glaucoma, the tension must be promptly reduced by general treatment and myotics if possible; but if these do not act immediately in reducing the ocular tension and in keeping it reduced, an iridectomy must be promptly done.

Subacute glaucoma is managed along the same lines as the acute, except that operative action may be delayed a longer time, though the rule should not be deviated from which demands an iridectomy in all cases that grow worse under general management and myotics.

Chronic glaucoma is managed in the same manner as the subacute, except that iridec-

tomy is contra-indicated in cases of degeneration of the iris, the results of the operation in such cases being unfavorable.

Absolute glaucoma is treated only to relieve pain: if salicylate of sodium fails, the treatment is exclusively surgical—sclerotomy, iridectomy, and enucleation.

Hemorrhagic glaucoma is rarely benefited by any operation, owing to the weakened condition of the blood-vessels within the eyeball. Hence, if general and local medication fail, and pain persists, enucleation is the only resource.

Secondary glaucoma calls for specific treatment according to the condition inducing it. If it be an intra-ocular tumor, enucleate the eye; if it be a lens swollen from discission, extract the same; and so through the list.

Finally, he who would do the most for a case of glaucoma must not only be able to quickly detect the disease in the form of its acute exacerbation; to apply the local remedies or do the operation which will quickest and surest restore the normal intra-ocular currents; but he must be able to recognize the constitutional dyscrasia underlying such acute attack, and put in operation the wisest measures for its mitigation or removal.

TREATMENT OF HEMOPTYSIS.

At a recent meeting of the American Climatological Society, Dr. JOHN H. MUSSER, of Philadelphia, made a report on the treatment of hemoptysis as practiced by thirteen physicians of note in that city. The following is an analysis of the methods adopted:

Rest, as was naturally expected, was enjoined by all. In nearly every instance it was urged that the rest should be in the recumbent posture. A number, however, urged that the patient should be in a semi-upright position, or the shoulders elevated.

The internal use of opiates was advised by most of the writers; of the bromides by one person. The cough is to be controlled, and this is done by the use of opiates also.

Cold on the chest, in the form of ice usually, was advised by five of the reporters. By two of the five, its use was advocated in hemorrhages in the second or third stage of tuberculosis only. Most of them required the ice to be applied over the affected part.

Diet was referred to by two only. One advised liquid diet, the other a readily digested but not low diet.

The use of inhalations was objected to by three of the reporters, and advocated by one, who suggested that they must not be used if there was much cough.

One of the reporters suggested the drying-cup if there appeared to be congestion of the lungs.

The internal remedies advised may be divided into three classes: (1) Drugs to quiet the nervous system and allay the cough. (2) Drugs to allay arterial excitement. (3) Astringents. All enjoined the use of opium, with the exception of two, both of whom overlooked its use. Morphine, however, was objected to by one very strongly. Professor Hare believes that the use of morphine causes more blood to be sent into the leaking blood-vessel of the lung, and advises the bromide of sodium in full doses by the rectum if it cannot be given by the mouth, and, if the pulse is strong, combined with chloral in doses of five or ten grains. Arterial sedatives were advised by two of the reporters. One thought well of the use of aconite in the hemorrhage of the early stage of phthisis, or of antipyrin in one- or two-grain doses with morphine; another thought that cardiac sedatives were admissible when given in moderate doses for hemorrhage in either the first or second stage. By some, astringents were advised without qualification; by others their use was admitted, although their value was doubted. Thus, one reporter says he uses ergot in early hemorrhages with grave doubt; another, that he uses ergot and gallic acid but does not believe they are of much account—they are given, however, with the hope that they may be of service. The following are recommended: ergot or ergotin by the mouth or hypodermically; turpentine, gallic acid, fluid extract of hydrastis, the oil of erigeron, acetate of lead, sulphuric acid, *Lycopus virginica*. Gallic acid is advocated by the majority of the reporters. Ergot is advocated by five; its use is not mentioned by four; two report against it absolutely, and two others consider it of doubtful value. Acetate of lead has two advocates, turpentine two, and the other astringents one each. One of the reporters considers turpentine the only hemostatic of any value; another thinks turpentine or terebene of greater service than any other drug in the late hemorrhages of tuberculosis, particularly if combined with morphine and antiyyrin. Common salt was advised by one of the reporters.

Most of the reporters agreed that the treatment was the same, whether hemorrhage took place in the first or later stages. One of them insisted on small doses of astringents in the

first stage, and of large doses in the later stages. Another insisted on the local use of ice in the later stages only; another, that turpentine should be used at this period. One insisted that the recumbent posture should not be assumed when the hemorrhage took place late in phthisis, and that opium should not be given or the cough in any way allayed at this period of the disease, on account of the danger of the accumulation of blood in the air-cells. Apparently, from the above, no difference in the treatment of the two stages existed.

From this review it may be said that the treatment of hemoptysis, as followed out by representative practitioners in Philadelphia, includes rest, mental and physical, the local application of ice, the use of opium, and, with considerable doubt as to their value, the use of astringents of the class referred to in the above analysis.

Dr. Musser fully endorses the above in so far as rest, ice and opiates are concerned; he is not willing to endorse the use of astringents. He would urge the use of dry cups in certain well defined conditions, and favors the use of saline catharsis if the patient is robust and the condition of the *primæ viæ* points to its necessity.—*Medical News*, Sept. 12, 1896.

THE SURGICAL TREATMENT OF FOCAL EPILEPSY.

The recent discussion on the surgical treatment of focal epilepsy before the American Neurological Association gave rise to two distinctly opposite opinions as to the utility of such operations. Drs. Sachs and Gerster of New York presented the results of trephining in nineteen cases of focal epilepsy due to injury, infantile cerebral paralysis, or some other acute cerebral condition. Three cases were cured, two greatly improved, and three somewhat improved, while in eleven cases there was no improvement. Some of the failures to obtain a complete cure, however, were ascribed to other causes, such as indulgence in alcohol and the neglect to follow proper treatment after the operation. As epilepsy in these cases is probably due to a degeneration of the association fibres originating from the focus of disease, and as this degeneration usually develops in the course of a year or two, it is obvious that surgical interference is warranted only in those cases where not more than a year or two has elapsed after the injury or after the onset of the disease which has caused the convulsions; although, in cases of depression or disease of the skull, trephining is admissible even though several years have elapsed. If the epilepsy has lasted but a short time and the symptoms point to a strictly circumscribed focus of disease, excision of the cortex, after careful testing to determine the precise location of the centres involved, is justified even though it may appear normal to the naked eye. The reason why such excision has not oftener proved successful is because it has not been done soon enough, before secondary degenerations were established. In long-standing cases, where such degeneration is widespread, surgical interference is useless.

Against this comparatively favorable view of the efficacy of surgical interference, Dr. Starr of New York presented his own experience of twenty-four operations without a single cure. He was unqualifiedly opposed to operating in idiopathic epilepsy, and was skeptical as to the value of operation in focal epilepsy due to injury or disease. He recalled Van Gieson's researches into the very extensive degenerations which may follow focal lesions of the brain, which would render it impossible to remove all sources of irritation by operation.

Drs. Sachs and Gerster held that the results after operative procedure should not be considered until at least a year has elapsed after the operation. If only so brief a period has elapsed after the operation, the results, as Dr. Starr pointed out, would be altogether too favorable, for both in focal and ordinary idiopathic epilepsy much longer periods may occur, under various forms of treatment, during which the patient is absolutely free from any attack. Out of seventy cases of operation collected by Dr. Gray, only three remained free from attacks after three years. Nevertheless, if a patient be suffering from frequent attacks, and we can obtain either complete or partial relief for a period of one, two, or three years by means of trephining, such an operation, considering the slight risk to life which it entails, is certainly justifiable, unless it can be shown that in later years the condition is materially aggravated by reason of such an operation. Certain cases apparently show this, but careful studies of a large series of cases many years after operation are still necessary.

While in the light of our present knowledge we would not deprecate any measure which gives any hope of benefit for so distressing a malady, another problem arises on the pathological side which demands further

research. If a localized injury to the brain gives rise to epileptiform attacks as a result of adhesions or thickening of the meninges, focal hemorrhage, scar-formation in the cortex, degeneration of association fibres, or proliferation of neuroglia, consequent upon that injury, may not the lesions caused by operation become the starting-point of similar disturbances? It is possible to excise a cicatrix and leave a smaller scar as a result of the operation, but it is still a scar, and experience has shown that even a small scar in the brain may be the starting-point of disastrous changes. Careful experimental work on the healthy brains of lower animals may throw some light on the still vexed question of the benefits of operative procedure in focal epilepsy.—Editorial in *Boston Medical and Surgical Journal*, July 23, 1896.

POINTS IN DISPENSING CALOMEL.

DRESCHER tells us in the *Medical Record* of August 29, 1896, that for years all of us have dispensed calomel together with "cane-sugar" in the form of powders, and no fault may have ever been found with this combination. Within the last few years it has been found by many of our physicians to be necessary to follow the "progressive line"—that is, to change the "old-fashioned" cane-sugar to milk-sugar, in the case of admixture with calomel, and even with more delicate and more easily decomposable chemicals. "Milk-sugar fame" came from abroad, and we here naturally ape European fashion, whether rightly or wrongly. In the writer's experience calomel and milk-sugar, safely ensconced in a good powder-paper, as is the common practice among pharmacists, will not keep so long as a mixture of "cane-sugar" and calomel, without showing signs of decomposition (turning gray).

This is generally not noticed, because of the large quantity of sugar of milk present, the excess hiding the discoloration; but when small amounts of sugar of milk are wanted with calomel, so that the powder can be placed dry upon the tongue or into the mouth of a small child, the metamorphosis of the calomel can be easily noticed before the administration of the dose.

Quite recently a graduate of pharmacy asked the writer to account for the "black streaks" in the mortar in which he had been triturating calomel with sodium bicarbonate. He knew well enough that sodium carbonate, heated with certain metallic salts, effected reduction, but of its effect in the cold or that of the bicarbonate he had no idea.

The same thing happens to us almost every day, when we triturate calomel with sodium bicarbonate to form "tablets." The reaction is simply this:

$$Hg_2.Cl_2 + 2NaHCO_3 = Hg_2O + 2NaCl + H_2O + 2CO_2$$

and the tablets turn gray. In mixing powders we had the chance of pulverizing finely each ingredient in the mortar by itself, and then mixing them all together upon paper with a spoon or spatula; but tablets must be moistened, even if only with alcohol and a little water, in order to bring the particles more nearly together. The alcohol cannot be supposed to act in the case, conceding to it all its powers of affinity.

Incidentally the author states that among the authorities on chemistry there ought not to be a difference of opinion as to the formula for calomel. Even good authorities on chemistry have quoted HgCl. The majority are in favor of Hg_2Cl_2. Logical reasoning suggests at a glance the latter to be more correct. For, when we construct the formula of a compound, we naturally first of all look at the oxides capable of formation. Upon their formulæ we generally base the whole series of possibly formable salts. Thus: $Hg'_2O'' =$ mercurous oxide, and $Hg''O'' =$ mercuric oxide, showing Hg to be a monad as well as a dyad. In accordance, the formula of calomel must be:

$$Hg'_2Cl'_2, \text{ or } \begin{array}{l} Hg'—Cl' \\ | \\ Hg'—Cl'. \end{array}$$

Were we to adopt the formula of HgCl, we would not account for the oxide, except that we accepted HgO_2, involving a fraction of a unit, contrary to our custom at present.

THE THYROID TREATMENT IN THE IDIOPATHIC TETANY OF CHILDREN.

The *Presse Médicale* of July 11 contains an abstract of an article published in the *Riforma Medica*, Nos. 115 and 116, 1896, in which the writer stated that Dr. Leone Maestro had experimented with this method of treatment in three cases of tetany. The thyroid gland was given raw or slightly cooked. Small doses were given in the beginning, and the dose was gradually increased until thirty grains a day was reached. The results obtained were very satisfactory in the three cases, and the author felt justified, in spite of the limited number of observations on record, in forming the following conclusions:

1. The administration of the thyroid gland is extremely useful in the treatment of idiopathic tetany in children, as it always diminishes the intensity and the frequency of the attacks, and shortens the duration of the disease; it also notably hastens the arrival of the latent period which precedes recovery.

2. The treatment is well tolerated by the children.

3. The organic exchanges, the digestive function, and diuresis are not notably influenced by this mode of treatment.

4. The circulatory and respiratory functions are accomplished normally during this treatment.

5. In very young children, on account of their perfect tolerance, it is useful to administer the thyroid gland, raw or slightly cooked, internally.

6. With the exception of certain peculiar cases, it is not necessary to suspend the treatment from time to time.

7. The daily dose is from thirty to sixty grains.

8. This treatment is not opposed to the symptomatic treatment, as it does not present any incompatibility with the methods ordinarily employed. — *New York Medical Journal*, August 1, 1896.

SUBCONJUNCTIVAL INJECTIONS OF SODIUM CHLORIDE VERSUS MERCURIC CHLORIDE IN VARIOUS OCULAR DISEASES.

VEASEY, of the Jefferson College, in concluding an article on this topic in the *American Journal of Ophthalmology* for September, 1896, reaches the following conclusions:

Subconjunctival injections of solutions of sodium chloride produce equally as beneficial results in the treatment of ocular affections as do subconjunctival injections of solutions of mercuric chloride.

The good results obtained from the latter are not due to any specific action of the minute amount of mercury that may come in contact with the inflammatory process, but probably to the unblocking of the engorged lymph-channels.

Subconjunctival injections of solutions of sodium chloride are of the greatest value in treating iritis and especially in checking the severe pain, relieving it, generally, in a very short time after the first injection is made.

Subconjunctival injections of solutions of sodium chloride produce less discomfort than similar injections of solutions of mercuric chloride, and never cause the adhesion between the conjunctiva and sclera which so frequently follows injections of the latter.

Subconjunctival injections of solutions of sodium chloride are of much value in producing the rapid absorption of subconjunctival hemorrhages, which, as is well known, are removed, as a rule, only by time.

Recent investigations on animals' eyes by Geering, of Basel, show that in almost all cases in which there have been given subconjunctival injections of mercuric chloride there are found on microscopical examination numerous adhesions between the periphery of the iris and the cornea in the region of the filtration angle. In no one of his experiments did he, however, get a glaucomatous rise of tension, though this possibility should be remembered. Whether subconjunctival injections of the salt solution will produce similar adhesions remains to be determined by further experiment.

INFLAMMATION OF THE MIDDLE EAR.

FRUITNIGHT writes upon this most important subject in the *Medical News* of September 12, 1896. Before considering the treatment to be directly applied to the affection of the ear, it is wise and necessary to pay attention to the state of the mucous membranes of the nasal and naso-pharyngeal cavities. It is now conceded by all observers that a great number of cases of otitic disease have their *fons et origo* in a diseased condition of those parts.

The inflammatory and catarrhal condition which may exist in the nasal and naso-pharyngeal tract will naturally demand treatment in order to relieve the difficulty in the auditory canal.

With this general statement, without particularizing the method or kind of treatment to be employed in the affections of the upper air-tract, the author dismisses its consideration, as it does not fall strictly within the lines of his paper. Of the treatment of the otitis he speaks a little more fully. At the outset of the attack, if much pain is present, he orders an instillation in the ear of from three to four drops of a watery solution of muriate of cocaine of five- to ten-per-cent. strength, as frequently as may be required to allay the pain. The solution should be warmed by placing the bottle containing it in warm water before it is dropped in the canal. In this connection he protests against the use of oily liquids in the ear, for, in his opinion,

they are surgically unclean, offering a nidus for the culture of germs and the accumulation of filth. He does not approve the stuffing of cotton in the ears, except when there is exposure to a direct current of air, and then it must not be pushed into the canal, but fitted in to conform to the contour of the auricle—in short, laid even with the rim of the auricle, covering the aperture of the auditory canal and not entering its lumen. Warm effusions and vapors he also employs to allay pain. Relays of small bags filled with poppy-heads or chamomile flowers heated have also been used with satisfaction. Sometimes irrigation with warm alkaline watery solutions will give relief. If the case be quite severe, counter-irritation, particularly in the form of sinapisms to the tragus and mastoid process, is of value. If the inflammation be of a higher grade, leeches may be employed to the mastoid process and tragus, care being taken that the leech dees not make its way into the ear, which can be avoided by plugging the latter while the creature is engaged in abstracting blood.

If the drum membrane be very tense and highly congested, then a paracentesis is indicated for the relief of the symptoms.

In serous otorrhea, a simple warm astringent solution containing sulphate of zinc, or boric acid, or the like, is employed to irrigate the canal. If the discharge be purulent, from eight to ten drops of the peroxide of hydrogen are dropped into the ear, which is to be flushed out with as much warm water as may be necessary until the outflow returns clear. These irrigations are repeated as often as the discharge reaccumulates. A fountain syringe is recommended; but the nurse is warned not to place it at too high an elevation, lest the force of the current be too strong, and thus become harmful. After irrigation the canal is gently wiped dry, with absorbent cotton, until no vestige of moisture remains. Thereupon two or three drops of an alcoholic solution of boric acid, of the strength of from five to ten grains to the half-ounce, are instilled in the ear, warmed in the manner already spoken of. These drops are used whether the discharge be serous or purulent in character. The patient may complain that these boric-acid drops smart; if not too severe, that is of no consequence—in fact, the author thinks it a good sign, for it means that it is stimulating the healing process. Occasionally blood will flow from the ear when the alcoholic boric-acid solution is used. In this event the stimulation is too active. Under such circumstances, or when the smarting is very painful, a reduction in the strength of the solution is indicated.

If the discharge from the ear is very persistent and resists this treatment, he orders irrigation of the canal with a solution of nitrate of silver of from five to ten grains to the ounce, of which solution from one drachm to half an ounce is to be added to a pint of warm water. He has frequently seen one irrigation control an otorrhea which had persisted for weeks, and it will be seldom necessary to continue the use of the nitrate-of-silver solution long.

These cases of otorrhea are sometimes apt to be long drawn out and well calculated to try the patience of both physician and nurse. The physician should encourage the nurse or mother to persevere in the treatment, assuring her that in the end success will follow her efforts, and that if she discontinues the treatment the disease will certainly not subside, but will, in all probability, eventuate in partial or total deafness.

He mentions the practice of insufflation of powders, sometimes employed in the treatment of this affection, only to condemn it. In his experience the powder rapidly commingles with the discharges, forming a hard caked mass, which in its turn becomes a source of irritation and acts prejudicially, both mechanically and chemically interfering with the surgical cleanliness of the parts, often increasing the pain and giving much trouble afterward in its disintegration.

If the patient exhibit any constitutional taint, as strumous, syphilitic, tubercular, or rachitic, the treatment approved in such cases must be brought into play to reinforce the topical therapeusis.

A FURTHER REPORT ON THE FLECHSIG METHOD IN THE TREATMENT OF INSANE EPILEPTICS.

CLARK, in the *American Medico-Surgical Bulletin* of July 25, 1896, writes on this interesting subject and tells us that since the report of the ten selected cases of epileptic insanity treated by the Flechsig method, read before the Section on General Medicine, New York Academy of Medicine, May 21, 1895, and which was published in the *Medico-Surgical Bulletin*, June 15, 1895, there have been but few noticeable changes in these trial cases. Case 1 has relapsed into her former irritable mental state; her epilepsy has remained unchanged. Case 2 has improved

physically and seems a little brighter mentally, especially since the bromide has been withdrawn; the seizures are as frequent and severe as before the Flechsig treatment was begun. Case 3, in which albuminuria was found, has not changed mentally or physically, aside from the fact that her nephritis seems to be a permanent feature of her epileptic dementia. Case 4 presents nothing new in her epilepsy; no change in her condition is manifest from that prior to the special treatment. Case 5 shows no change in her condition, except an improvement in physical health; bromide was withdrawn after ten months' trial; her seizures are not quite so severe as before the opium treatment. The only change in Case 6 is an improvement physically on the withdrawal of bromide, which was done eight months ago. Case 7, in which great improvement mentally and physically was manifest, has now resumed his former epileptic state and has had several fits in rapid succession; these have taken place while he was under the direct influence of the bromide, twelve months after the trial had been in operation. Cases 8, 9 and 10 present no new features in their disease of epilepsy or its attendant insanity.

Upon the whole, and after a careful review of the treatment in these cases from its very beginning, the writer has been forced to the same conclusion enunciated in his original report of these cases, and that is that the treatment is of but little value in chronic cases of epilepsy in which dementia has taken place to any marked extent. A repetition of the treatment in this class of cases would in all probability result in a like disappointment. The conclusion, therefore, must be drawn that the Flechsig method is far from being as serviceable as has been predicted for it, although its efficacy at first seemed so manifest.

SEASICKNESS: ITS CAUSE AND RELIEF.

MINOR tells us in the *New York Medical Journal* of October 17, 1896, that in the *Memphis Journal of the Medical Sciences* for October, 1889, he advanced the theory of the aural origin of seasickness, basing his conclusions upon "the freedom of deaf-mutes from seasickness, and its bearing upon the theory of seasickness and its treatment," which was the title of the writer's article. In a trip across the Atlantic he observed the entire absence of all symptoms of seasickness in a party of five deaf-mutes. Indeed, their freedom from any annoyance of the kind, and the excellent appetites they enjoyed and gratified, while others around them were suffering from seasickness, excited general comment. Inquiry elicited the fact that deaf-mutes so rarely suffered from seasickness as to be, as a class, practically free from the disorder under all circumstances. Through the courtesy of Mr. Hasentab, of the Illinois Institute for the Deaf, at Jacksonville, Illinois, who was one of the party, it was learned that out of a party of twenty-two deaf-mutes who crossed the Atlantic two months previously, not one suffered in the slightest degree from any form of seasickness, and yet a number of other passengers succumbed to it. Later, this party crossed that most trying of all bodies of water, the English Channel, and the same immunity was observed, though the passage was a rough one, and almost every other passenger on board became seasick. Mr. H. also told the writer that he once made the trip from San Francisco to Portland by sea, with about thirty other deaf-mutes, and that the only one of these who suffered from seasickness had some disease of the ears which often caused dizziness and nausea at other times.

When it is remembered that only about three per cent. of persons crossing the ocean are entirely free from seasickness, it becomes evident that there must be some special cause for this freedom from it in deaf-mutes; and as the condition of the ears constitutes the only difference between the deaf-mute and the ordinary individual, it is naturally sought here.

It may be well to recall the fact that both physiological experiment and pathological observation point to that part of the inner ear known as the semicircular canals as exercising a controlling influence over the maintenance of the erect posture and the sense of equilibrium—functions frequently disturbed on shipboard.

It is generally conceded that seasickness is produced by the frequent and rapidly changing motions of the ship—conditions which it is the function of the semicircular canals to recognize and influence. Symptoms very similar to those of seasickness can be produced by turning around rapidly and frequently, or by swinging, and the cause is probably the same in each instance. And in diseased conditions of certain parts of the inner ear—the semicircular canals, in Menière's disease—the symptoms are somewhat like those of seasickness.

Certainly if the foregoing deductions make

probable the theory that the semicircular canals are sometimes concerned in the production of seasickness, then reasoning by induction establishes it beyond a doubt.

Deaf-mutes do not become seasick, nor do they suffer inconvenience—dizziness or nausea—when turned rapidly around, or when swinging. Moreover, it is a well known fact that only in the irritative form of disease of the semicircular canals do dizziness, etc., appear, and that destructive disease of these parts does not produce either dizziness or nausea. Moos reports a case in which, after the falling out of a necrosed semicircular canal, deafness appeared, and with it permanent cessation of severe dizziness. And the writer has observed the same thing in one of his patients.

In deaf-mutes there is absolute deafness, or very great reduction in hearing, dependent upon destruction or serious impairment of function of the peripheral distribution or sound-perceptive elements of the auditory nerve, in which process the semicircular canals are included.

These facts must force one to the conclusion that the reason why deaf-mutes do not suffer from seasickness is owing to the fact that their semicircular canals are destroyed or their sensibility impaired; and it is equally rational to suppose that others who suffer from seasickness do so because they have semicircular canals which are irritated by the frequent and varied motions of the ship.

Now if by the use of any agent the semicircular canals can be anesthetized, the value of these conclusions will be settled at once. The author suggested the use of oleate of cocaine, putting a few drops in the ear every day or two, or oftener if necessary. Living in an interior town, however, he has not had an opportunity of trying the drug in genuine cases of seasickness, and has had to limit himself to the induced and certainly allied affection—the dizziness and nausea produced by rapidly turning around. The results obtained have surpassed his expectations, and certainly suggest that the local use of cocaine in the ears may prove a most valuable remedy against that *bete noire* of ocean travel, seasickness.

He experimented with twenty-four healthy-eared individuals and found that forty revolutions to the minute constituted rapid turning; that three or four such revolutions were sufficient to cause dizziness and often a sense of nausea; that three drops of an eight-per-cent. solution of cocaine oleate, dropped into each ear, diminished the susceptibility to dizziness, etc., to such an extent that more than double the number of revolutions could be made before any inconvenience was felt; and that when, from continued turning, the dizziness, etc., came on after the use of the cocaine, it was less pronounced and more transient than without it.

The effects of the cocaine begin to manifest themselves in from twenty minutes to half an hour, and last from four to six hours.

He, therefore, states that seasickness is a manifestation of irritation of the semicircular canals caused by the frequent and varied movements of the ship; that any drug which will lessen the irritability of the semicircular canals is a rational remedy for seasickness, and that a solution of cocaine dropped into the ear is such a remedy.

THE EMPLOYMENT OF NITROGLYCERIN IN ANGINA PECTORIS.

The following prescription is given by the *Revue Internationale de Médecine et de Chirurgie* of September 10, 1896, for the treatment of angina pectoris:

℞ Nitroglycerin, 3 grains;
Tincture of capsicum, 40 drops;
Alcohol and peppermint-water, of each 3 drachms.

From five to ten drops of this mixture may be given for an attack, and if this dose does not produce a good effect a larger dose may be administered.

THE TREATMENT OF LABYRINTHINE VERTIGO.

GELLE, in *La Tribune Médicale* of July 16, 1896, recognizes the fact that labyrinthine vertigo depends upon a number of causes. When it is due to anemia of the labyrinth the symptoms are vertigo, subjective noises in the ears, and a tendency to syncope. It is sometimes seen in persons who have suffered from chronic diarrhea or other diseases impairing the general nutrition, and in cases of prolonged lactation or of convalescence from grave diseases, in cases of marked albuminuria, in cachectic affections, in dilatation of the heart, and similar disorders. Sometimes it is seen in connection with arterio-sclerosis, in senility, in cases of diabetes associated with rapid loss of flesh, and in cases of bleeding hemorrhoids. It is also sometimes due to local thickening in the ear, particularly of the drum. In many of these cases there is, in association with the vertigo, hyperesthesia

and pain. The remedies which are to be employed are the glycero-phosphates and a tonic regimen, the use of stimulants, the employment of milk, and iodides if arterio-sclerosis or cardiac disease is present. The use of the milk diet, with a few drops of the tincture of strophanthus or small doses of sparteine or caffeine alternated with fluid extract of kola, has proved valuable. Should syphilis be the cause of the disease it is not necessary to state that anti-syphilitic treatment is absolutely necessary, and where an old meningitis is its cause the physician should not hesitate to use counter-irritation to the back of the neck and to employ static electricity to the head. Should the vertigo be associated with middle-ear disease, local applications suitable for such cases are of course to be employed. The bromides in many of these instances would be of value, but strychnine sometimes does other cases much good, and arsenic is a remedy always to be remembered.

Gelle believes that the sulphate of quinine is a medicine of very great advantage in many cases of persistent vertigo following primary or secondary disease of the internal ear. Of course, many cases are best relieved of their vertigo by surgical interference with the bones of the ear. In those cases of labyrinthine vertigo with hyperesthesia of tympanic membranes, most excellent results are to be obtained from the use of quinine. The method of treatment consists in the administration of this drug (quinine) for a period of ten days, which is then followed by another period of ten days in which the drug is not administered. The dose each day should be about ten grains, but it may be gradually increased to fifteen grains. At first the patient may state that the use of the drug distinctly increases his vertigo.

In those cases of vertigo which are associated with toothache and neuralgia of the fifth pair of nerves, sulphate of quinine is also useful and it may be well associated with small doses of aconite. If the vertigo is due to toxemia, such as acute malarial poisoning for example, distinct treatment directed against the infection should be resorted to; and in the vertigo which arises from gout, antilithic remedies should be given. Sometimes vertigo is due to poisoning from constipation and can be relieved by the proper use of laxatives; and again, such poisons as tobacco, salicylate of sodium and the excessive use of quinine may produce it. In some instances we meet with cases of vertigo which are due to reflex irritation; they are seen most frequently in hysterical and neurasthenic persons and are frequently associated with attacks of migraine or facial neuralgia, or even with hepatic or nephritic colic. The conclusion of Gelle's article is that in the treatment of labyrinthine vertigo the use of the sulphate of quinine is of extraordinary importance, and that it is useful in the majority of instances.

[This article is of particular interest in view of the universal teaching of therapeutists that middle-ear disease contra-indicates the use of cinchona preparations. We can readily understand, however, that under certain circumstances the very congestion of the middle ear which quinine produces may prove of great therapeutic value.—ED.]

THE USE OF FORMALIN IN GONORRHEA IN WOMEN.

In the *Journal de Médecine de Paris* of August 16, 1896, DE SMET calls attention to the treatment of gonorrhea in women by means of formalin. He obtained excellent results in no less than sixty cases by this new mode of treatment.

The vulva is washed with a 1:1000 solution of formalin, and before introducing the speculum the vagina is washed out with a two- to three-per-cent. solution. By means of a tampon of cotton soaked with this mixture, care is taken to bring the drug in direct contact with the diseased surface in every part, particularly in the cul-de-sacs and rugosities. It may also be well to swab out the cervical canal of the uterus by the use of a 2:1000 solution. Should the mouth of the uterus be ulcerated, before the speculum is withdrawn a tampon of gauze impregnated with 1:1000 solution of formalin should be introduced and allowed to remain there for two or three hours.

De Smet asserts that these applications are not painful and that they should be repeated daily for several days. A solution of one per cent. of formalin exercises a slightly cauterizing influence which is manifested by a whitening of the mucous membrane. A five-per-cent. solution causes a burn of the mucous membrane and distinct cauterizing effect. Where the case is grave and there exists a gonorrheal metritis, surgical intervention such as curettage is needed, but even in these cases the formalin applications are of advantage. De Smet believes that formalin offers the most rapid available means of cure of gonorrhea in the female.

INTESTINAL INDIGESTION.

UPSHUR, in *Mathews' Medical Quarterly* for October, 1896, states that in the acute form of indigestion pain, flatulence and diarrhea reveal the nature of the trouble. In the chronic form, the history of the case, the existence of the symptoms (digestive, mental, nervous, and cardiac), evidences of malnutrition—all these, with careful analysis of the symptoms pertaining to the liver, the pancreas, and the stomach, will enable us to reach a correct conclusion with little difficulty. It must be borne in mind, however, that the presence of fats in the stools, or a fatty diarrhea, does not always indicate pancreatic disease; it has occurred in ulceration of the duodenum. The existence of glycosuria may be an aid to pointing out pancreatic disease.

If the disease is treated promptly and decisively, says the author, a cure may be effected, especially in the acute form. The chronic form is not so promising. Of supreme importance is implicit obedience on the part of the patient. Everything depends upon this, and must be made subordinate to it. This being done, patience and perseverance may and will accomplish much. If the general health has become much impaired, the prognosis is more doubtful. Anemia, debility, coexistent gastric dyspepsia, hypochondria, or a strumous diathesis in children, adds much to the gravity of the prognosis. If organic disease of the stomach, of the liver, of the pancreas or of the heart exists, the prognosis is very bad.

In the acute form, the first indication is to free the bowel of all irritant matter. A brisk mercurial purgative is preferable for this. The diet should be regulated, and pain relieved, if unbearable, at the beginning of the attack, by a hypodermic injection of morphine. If any intestinal catarrh exists, there is no remedy, says Dr. Upshur, superior to the phosphate of sodium in doses of thirty grains every two hours, given in half a teacupful of hot water. The tongue cleans promptly under its influence, and pain, soreness and flatulence disappear. It should be continued for twenty-four to forty-eight hours. The diet should be simply milk or some suitable animal broth.

In the chronic form the first indication is to put the patient upon a strict but nutritious diet, such a diet as will put the duodenum at rest as much as possible. In the beginning, an exclusive milk diet is best; if it does not suit the patient, it may be given skimmed, or if it still disagrees or is distasteful, the following preparation is palatable and beneficial in most cases: To a tumbler of sweet milk, add the white of an egg whipped up to a light froth and a wineglassful of lime-water. Such farinaceous food as barley gruel or oatmeal may be combined with it. Animal broths may be allowed, or some of the prepared meat essences; they stimulate the appetite and the secretion of the glands. When the demand comes for an improved diet, boiled fish, oysters, sweetbread, the white flesh of fowl once a day, and soft boiled eggs, one or two a day, may be allowed. Bread one day old, sweet and light, macaroni boiled in milk, and rice may also be allowed. Coffee is contra-indicated, and tea should only be allowed when largely diluted with milk; cocoa (Phillips's digestible) which contains pancreatin is a very pleasant drink. Butter is to be given in moderation. Wines are contra-indicated, except under special conditions, to be determined for each individual. Mineral waters do good, and health resorts are useful by change of air and scene, and the waters are useful, in those cases where little water is drunk, as a means of correcting constipation. Cheese, crabs, lobster, richly dressed meats, too much fat, pastry, and vegetables are to be avoided. The patient should be earnestly enjoined as regards the thorough mastication and insalivation of food, the harmfulness of haste in eating, and the necessity of a sufficient rest before and after eating. Tobacco-chewing and smoking should be forbidden as impairing the character of the saliva and interfering with pancreatic secretion. Careful examination of the mouth should be made, and if the teeth are imperfect, artificial ones should be substituted for them. All causes which have combined to bring about the attack should be removed. A change to a cooler climate is advisable; early hours of sleep and regularity as to the time of meals, and the interval between them, should be earnestly advised. In overworked professional men, rest from all mental and physical effort should be insisted upon; massage and electricity are also very useful. The overtaxed child should be taken from school, and a careful effort made for his physical upbuilding. Sea-bathing, properly regulated, is beneficial. If the condition of the patient is so extreme as to demand it, an artificially digested food may be given, such as peptonized milk.

Finally, continues Dr. Upshur, as to the administration of drugs, sulphuric ether has

been recommended, as it possesses the power of stimulating the pancreas, given about an hour before meals. Good results follow the use of pancreatic extract and soda. Gastric digestion should also be cared for, as the more perfectly this function is performed the better the quality of the substances which go to the duodenum for the completion of digestion. When the liver is at fault, the bichloride of mercury in compound tincture of cinchona is very useful. This organ should also be stimulated to improved action by the administration of benzoate of sodium or ammonium, salicylate of sodium, etc. Atony of the intestinal walls, or deficient peristalsis, should be treated by the administration of strychnine given in full doses. This drug cannot be too highly recommended for its power for good. Quinine in tonic doses is also available, and may be given in combination with it. If flatulence and abdominal distention are present, bismuth subnitrate is indicated in combination with benzosol or salol. In a case which recently came under the author's care he found great benefit from large doses (thirty grains) of the hyposulphite of sodium. Constipation is to be relieved by enemata or the administration of one of the bitter waters. He has found the Rubinat most satisfactory. Fluid extract of cascara is also useful, acting as it does as a tonic to the intestine and improving the muscular tone. Fowler's solution and tincture of nux vomica will be found useful. Chloride of gold and sodium is a most valuable remedy; the only objection to it, which may be combated, is that it constipates; this property makes it useful in the diarrheal form. As soon as the patient's condition will admit of it, chalybeate tonics should be administered, backed up by such other remedies as will improve assimilation and nutrition.

A METHOD OF TREATING ACUTE DYSENTERY.

In the *Journal de Médecine de Paris* of September 13, 1896, the following method, employed by TESTEVIN, is mentioned. The objects which we seek in the treatment of this condition are, to diminish the number of the stools, to antisepticize and modify the intestinal secretions, to attack the local anatomical lesion, and to abate collapse.

The best method of decreasing the number of the stools is by the hypodermic injection of morphine, $\frac{1}{12}$ grain, given every hour. At the same time, in the intervals between the injections the abdomen of the patient should be covered by a large mustard poultice, which will act as a revulsive and relieve the pain. In other instances an equally good result can be obtained by the use of a rubber ice bag applied over the abdomen. Intestinal antisepsis is best realized by the administration of calomel in frequently repeated small doses for two or three days, and it is often well to associate with it ipecac and opium. As soon as the stools are bilious in appearance this medication can be stopped and full doses of bismuth can be administered.

THE TREATMENT OF STOMATITIS.

According to the *Journal des Praticiens* of August 15, 1896, MORAIN uses the following treatment: In aphthous stomatitis, the ulcers are touched with a tiny piece of absorbent cotton which has been dipped in one of the following solutions:

℞ Salicylate of sodium, 1 drachm;
Distilled water, 6 drachms.

Or,

℞ Borax, 45 grains;
Salicylate of sodium, 75 grains;
Tincture of myrrh, 1 drachm;
Syrup and water, of each ½ ounce.

Or,

℞ Chlorate of sodium, 1½ drachms;
Cherry-laurel water, ½ ounce;
Syrup, 7 drachms.

The child should also take milk which has been boiled or sterilized. In ordinary erythematous stomatitis it is well to wash out the child's mouth, particularly after each meal, with the following solution:

℞ Borax, 30 grains;
Bicarbonate of sodium, 1 drachm;
Distilled water, 4 ounces.

Or the following may be used:

℞ Boric acid,
Chlorate of potassium, of each, 15 grains;
Lemon juice, ½ ounce;
Glycerin, 6 drachms.

THE TREATMENT OF DIABETES IN CHILDREN.

According to the *Journal des Praticiens* of August 6, 1896, JOSIAS points out that while true diabetes is rare in children it is nevertheless a grave disease when it occurs and is usually accompanied by an extraordinary degree of wasting. Neither can it be treated by the use of opiates in the manner in which we treat diabetes in adults. As far as possible, however, a diet composed of meats and

gluten bread should be used. To take the place of the sugar which we must necessarily deprive the patient of, glycerin or saccharin may be combined with some alkaline substance such as follows:

℞ Saccharin, 45 grains;
Bicarbonate of sodium, 30 grains;
Mannite, 2 ounces;
Mucilage, a sufficient quantity to make 100 pastilles.

These may be used in place of lump sugar. Violent physical exercise and severe mental effort are to be strictly interdicted, but tonics such as cod-liver oil in large doses and cinchona are indicated. Arsenic is a remedy of particular value given in full doses; well diluted, if Fowler's solution is used. As drugs to diminish the quantity of sugar by their nervine influence we may employ:

℞ Antipyrin, 3 drachms;
Glycerin, 1 ounce;
Water, 8 ounces.

One or two tablespoonfuls of this may be given each day. Another preparation which is of value in some cases has been recommended by Legendre:

℞ Sulphate of strychnine, 1-200 grain;
Arseniate of sodium, 1-50 grain;
Pure codeine, 1-6 grain;
Valerianate of quinine, 1 grain;
Extract of valerian, a sufficient quantity to make one pill.

From one to six of these pills may be given each day. Sometimes the salicylate of sodium in moderate doses does good in these cases; in other instances ergot is of value.

THE TREATMENT OF VOMITING IN TUBERCULOUS PATIENTS.

La Médecine Moderne of September 2, 1896, quotes BARTH concerning the treatment of the acid eructations, the abdominal swelling and constipation, and the other alimentary disorders of tubercular patients. Barth is in the habit of prescribing a wineglassful of Vichy water after each repast, which should consist of roast or boiled meat without sauce, and plainly cooked vegetables. After the meal he administers a cachet with the following contents:

℞ Prepared chalk,
Calcined magnesia, of each, 4 grains;
Binoxide of manganese, 2 grains;
Powdered belladonna leaves, 1-6 grain.

Should there be much pain, he adds to this formula one-sixth of a grain of powdered opium. He also insists that the patient shall rest absolutely after taking the meal. Should constipation be present he directs that the patient use a rectal injection, and every four or five days take a glass of Bordeaux water or a Seidlitz powder. For the vomiting which is so frequently met with in tubercular patients, he administers two to three drops of wine of opium or a teaspoonful of the following solution, which is particularly useful if the vomiting follows excessive cough:

Hydrochlorate of morphine, ⅓ grain;
Distilled water, 4 ounces.

One or two teaspoonfuls as needed.

A METHOD OF TREATING CANCER.

ATKINSON writes to the *New York Medical Journal* of October 17, 1896, of his treatment of cancer:

Given a case of epithelioma or other form of cancer, the author first carefully cleanses the surface of the diseased part with pyrozone, then dries it carefully. Using a ten-per-cent. solution of cocaine, he makes the part fully anesthetic. To the surface he then applies a full-strength solution of sodium ethylate. This strength is got by allowing the crystals to deliquesce. He then applies a powder made as follows:

℞ Acetanilid, 1 drachm;
Aristol, 2 drachms;
Boric acid, 1 ounce.

This powder is put on thick over the whole diseased surface. He then spreads lightly with vaselin a piece of sheet wadding large enough to cover the whole surface, and puts absorbent cotton and a bandage over this. This treatment is repeated as often as necessary, and a cure follows in from two to five weeks, according to the amount of tissue involved and the patient's general condition.

He places his patient in such a position as to bring the bottom of the area horizontal, and fills the cavity with pyrozone, first having wiped all secretion carefully away, because this saves time. Then when the "boiling" ceases he dries the parts with absorbent cotton and pours in the cocaine, waits five minutes for it to act, and then dries it out with the cotton.

There is no more painful caustic than the ethylate, and even the precaution of using cocaine does not always entirely control the pain. When the ethylate touches the surface a peculiar change is noticed. If the wound is clean the fluid spreads itself out rapidly, and where there is diseased tissue the part instantly turns black. The rest of the sur-

face becomes brown. If the wound is not clean and is filled with the discharge of the cancer, the whole surface turns black.

One application is made at first over the whole surface. As soon as the black color is seen, the preparation becomes very gummy and tenacious, and should not be disturbed. Then the powder is dusted on, packing the wound fully. Considerable edema follows the first application, but soon disappears, and any pain stops as soon as the caustic action ceases by all of the agent being used up.

The vaselin is used on the wadding to prevent the dressings from sticking to the wound, and the cotton over it catches any discharge. It is remarkable what a soothing effect the vaselin has upon the wound, and perhaps it aids in limiting the pain.

It is the writer's practice to see the patient and dress the sore every second day, beginning just as if the case were a new one. But he is careful, as the cure progresses, to touch only such points as show disease and to avoid any forcible removal of dressings, so as not to disturb the parts and to prevent bleeding. It is necessary to use a glass rod in applying the ethylate, because of its excessive corrosive action, and it is almost impossible to keep it in a glass-stoppered bottle. Atkinson keeps it in small corked bottles and is careful not to let it touch the cork.

THE MEDICAL AND SURGICAL TREATMENT OF CANCER OF THE UTERUS.

In many cases where it is not possible, for various reasons, to operate upon cancer of the uterus, some other means of treatment is necessary, at least in a palliative sense, for the purpose of controlling the hemorrhages and the fetor of the discharges. Aside from the use of curetting and the use of tampons of creosote and glycerin or camphorated naphthol, we can employ in addition cauterization with the thermo-cautery, or the cavity of the uterus can be packed every two days with gauze containing salol in such a way as entirely to prevent hemorrhage. Vaginal injections of Labarraque's solution, a teaspoonful to a quart of hot water, may be given after the removal of the gauze, or this may be supplemented by the following:

℞ Carbolic acid, 8 grains;
Glycerin, 8 ounces;
Essence of thyme, 3 drachms.

A teaspoonful to one or two liters of water as an injection.

Or in its place we may use:

℞ Salicylic acid, 15 grains;
Essence of geranium rosatum, 75 grains;
Alcohol, 90-per-cent., 6 ounces.

A tablespoonful to a liter of water.

In still other cases we may replace these injections by the use of tampons heavily loaded with a powder made up of equal parts of powdered benzoin, iodoform, and magnesia. At the same time that these local measures are resorted to we should also give tonics, such as wine of cinchona, Fowler's solution, champagne, and other sustaining drinks and foods.—*Journal des Praticiens*, July 18, 1896.

THE TREATMENT OF CHRONIC TUBERCULAR DIARRHEA BY NITROGLYCERIN.

DAUCHE treats the membranous enteritis which is sometimes found associated with tuberculosis, by large intestinal irrigations of warm solutions of boric acid, or of hyposulphite of sodium in the proportion of two per cent., or of nitrate of silver in the proportion of 1 to 2000. A large esophageal tube or a urethral catheter is introduced into the rectum, and the liquid is allowed to slowly enter the bowel. These irrigations are practiced every day or every other day and are finally alternated with the administration of purgatives such as sulphate of sodium one to three drachms, sulphate of magnesia in the same dose, calomel in the dose of from one to two grains, associated with benzonaphthol in the dose of four to fifteen grains or salol in the dose of two to ten grains. The precautions which must be followed are to introduce large quantities of water into the bowel, and to do this with a very slight pressure (not above a foot or eighteen inches), and to have the patient lying prone upon a couch with the left buttock elevated by means of a pillow in order to aid in the entrance of the liquid into the cecum.—*La Médecine Moderne*, Sept. 2, 1896.

A POPULAR ERROR IN THE TREATMENT OF SYPHILIS.

METZEROTT, of Washington, in the *American Medico-Surgical Bulletin* of July 25, 1896, after pointing out the common errors in the treatment of syphilis, tells us how it should be handled. The rule laid down by Professor Neuman for the treatment of syphilis is, to do nothing at all in the way of medication from the time of the appearance of the initial symptom until the secondary symptoms are

well developed, unless the same takes place during pregnancy or when the initial sore is on the face or in the urethra. During this interval the general nutrition of the patient is to be improved in every way possible—smoking is to be discouraged, the mouth is to be kept thoroughly cleansed, the gums hardened, and carious teeth removed or filled. The digestive system is to be looked after, and the skin is to be brought to a healthy state by means of daily cold ablutions and vigorous friction. Previous to the first inunction the patient is to have several baths; the reason for this being that it has been found that an ointment is more readily absorbed when the skin is kept thoroughly cleaned. The inunctions are to take place in a regular cycle and upon different parts of the body each day. Upon the first day the calves are to be anointed; upon the second the inner and outer surfaces of the thigh and inguinal region; upon the third day the side of the chest and abdomen (the navel, the nipples and the bony prominences being avoided); on the fourth day the flexor side of the arms; on the fifth day that portion of the back lying beneath the angle of the scapulæ; on the sixth day no inunction is given, a bath taking its place; and on the seventh the cycle is again commenced by anointing the calves. To give a good inunction will require from twenty to thirty minutes, and the number of inunctions will depend upon the form of the syphilis, the condition of the patient, and the course that the syphilis will take in the individual case. As a rule twenty-five will suffice in a maculous and thirty-five in a papulous syphilide, but there are many exceptions, and the writer recalls a patient who took seventy-five inunctions during one course of treatment with only slight symptoms of salivation; and he is now treating a patient with late secondary syphilis showing itself in a maculous form, and has already given forty-five inunctions, and although the eruption has entirely disappeared he shall give several more before he interrupts the treatment.

As regards the technique which he employs, it is the same as that of Professor Neuman. He orders an ounce of the unguentum cinerium (the blue ointment). This he has divided into from sixteen to twenty doses, each dose being put up by itself into a separate package. Whenever possible he gives the first inunction himself, and in the morning if practicable, on account of the absorption not being interfered with by perspiration, as may be the case at night. During the entire course of the treatment the greatest care is taken of the teeth, gums, and mouth. The patient is instructed to cleanse his teeth with a good dentifrice the usual number of times per day. Twice a day, after having thoroughly rinsed his mouth with cold water, he is to paint and briskly rub his gums with pix liquida, which is applied by means of a piece of absorbent cotton attached to a stiff wooden applicator, and later removed with charpie or a piece of linen. While the inunction is being taken, a bottle filled with 1½-per-cent. solution of carbolic acid, or a one-per-cent. solution of the chlorate of potash or of alum, or ½-per-cent. solution of thymol, or salicylic acid, is placed by his side. From this he takes a mouthful at a time, rinses his mouth, and then spits the same into a receiver. This procedure is repeated as long as the inunction is continued and is most important, for stomatitis, loss of teeth, periostitis, suppuration of the glands of the neck, and the other disagreeable features of mercurialism are avoided.

The inunction is commenced by opening one of the packages of mercury and by means of a spatula applying the same to the parts to be anointed. Little pieces the size of a pea are smeared upon a dozen different places, and these by a slow massage movement are rubbed into the tissue until nothing except black granules are visible in the follicles of the skin. After this, other applications are made until the whole package has been used. It is advisable for the patient to rest an hour or so after each inunction; if the weather is favorable it is best to be out of doors in the open air, but if disagreeable the patient is to keep his room. Perfect mental rest, and a suspension for the time being of all work, is desirable.

The excellent results obtained at the hospitals of the Hot Springs of Arkansas, he believes, are due more to an observance of these minor details than to the water, which probably does no more than to keep the skin in a state which favors the absorption of mercury.

After the first inunctions have been given, no medicines are to be prescribed for one or two months; when light relapses make their appearance, mercury or the iodides are to be administered internally, but if these relapses are severe the inunctions are to be again employed. During the latent period of the first two years of the affection, mild internal medication with preparations of mercury and the

iodides is prescribed for four weeks at a time, treatment being entirely interrupted for intervals of from two to four months.

This is the method of Professor Neuman, which, notwithstanding the new and popular method of Professor Finger with deep injections of the salicylate of mercury, is doing wonders in Austria, and which will be followed with good results wherever employed. Finger's method is as follows: Five-per-cent. solutions of the salicylate of mercury are injected into the nates or the shoulder of the patient once a week for from five to eight weeks, until all symptoms of the disease have disappeared; then the treatment is interrupted for one or two months, and one-half the number of injections which were originally administered are given. The injections are repeated after the first year, and mercury and iodides internally prescribed at intervals of one to three months during the entire course of treatment extending over three years. This is undoubtedly one of the best forms of medication known, but the deep injections are dangerous, for they are not always well borne, and therefore justly condemned by his colleagues, Neuman and Kaposi. Having seen seven cases of mercurial dermatitis result from this form of treatment, notwithstanding the favorable opinions expressed as to the practicability of its employment, he individually could not administer one of these injections without the greatest apprehension and foreboding.

THE USES OF TRIONAL.

In the *Journal des Praticiens* of July 25, 1896, we are given the results of a study by RUHEMANN concerning trional. He quite agrees with the conclusions of Schulze and Beyer as to its harmlessness and the rare development of toxic phenomena. He has employed trional without inconvenience in all doses, to the extent that as much as nearly 3500 grains has been given during a period of six months. He has also used it in the treatment of children with good effect. The doses which he thinks ought to be given to children are as follows: for infants of one month to one year, 3 to 5 grains; one to two years, 6 to 12 grains; two to six years, 12 to 20 grains; six years to ten years, 20 to 25 grains. He uses it with advantage in the treatment of grave chorea and conditions associated with cerebral excitement in childhood. In adults the dose which he thinks is proper as a maximum one is thirty grains. Should the patient be suffering from dyspepsia he advises the administration of trional by the rectum in milk in the dose of twenty grains. As a rule its influence under these circumstances is extraordinarily prompt, sleep coming on in from fifteen to thirty minutes and lasting from six to nine hours. He does not believe that trional has any cumulative influence, nor does he think that cardiac affections contra-indicate its administration, notwithstanding that Kohpers has stated an opinion to the contrary.

On the other hand, Ruhemann does not consider that trional is a specific for insomnia. It is not of advantage in the insomnia due to cough or in that due to pain unless it is associated with morphine or antipyrin. In the insomnia of the night sweats of phthisis and of neurasthenia or that following the infectious diseases it seems to be of value, but the condition in which it is most advantageous is the insomnia of the various neuroses.

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In *La Presse Médicale* of September 16, 1896, we find an abstract of an article from the *Revue Médicale de la Suisse Romande* (1896, page 431), in which the author reports the case of a woman in good health, who died of iodoform poisoning. On the left leg there was a small varicose ulcer which had been dressed with iodoform powder. After this treatment tumefaction set in and the leg became red and painful, and at the end of eight days there was a generalized eruption which was manifestly due to the action of the iodoform. On the legs, the thighs, and the body, the exanthem was like that of measles; on the arms and the buttocks it was characterized by a very diffuse scarlatinous redness. On the red ground of the eruption there was a great number of small miliary vesicles, which were detached and contained a lemon-colored liquid.

The patient suffered greatly; her face was red and tumefied, and there was profuse lacrymation, but no fever. The general condition rapidly became worse; the face grew pale and drawn; and in twenty-four hours 210 grains of albumin were found in the urine. Dyspnea and weakness became progressive, and in twenty days after the onset of the symptoms death occurred.

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The solutions are injected at the body temperature. It has been found by experiments upon animals that there is what is known as a toxic rapidity of injection, and if this be exceeded the animal quickly dies; but it has little practical application in man, as this limit could be reached only by the greatest recklessness.

As might be expected, the most satisfactory results have been obtained in cases of exsanguination, and clinical and experimental results agree that the injected serum not only supplies in quantity the place of the blood lost, provided the hemorrhage has not been too great, but that it has a decided hemostatic action. The clinical phenomena which follow these large injections in cases of acute anemia or of shock, have deeply impressed those who have witnessed them. Patients who were blanched, cold, senseless, and almost without pulse or respiration, have shown marked improvement before 100 grammes of fluid were injected. With the continuance of the treatment, pulse and respiration became normal, the cheeks regained their color and the eyes their brilliancy, and consciousness returned. With the injection of one and a half to two liters, reanimation was complete, though in several instances it was necessary to repeat the treatment once or twice.

The result of saline injections in infection are none the less interesting, although they are less clearly understood, and the treatment in such conditions has been far less satisfactory than in acute anemia. The clinical observations here have mostly rested on the results in pneumonia and cholera, and such surgical affections as septicemia after childbirth or surgical operations. In a recent article in *La Presse Médicale*, June 17, 1896, Bosc has gone into this part of the subject very thoroughly, and a typical case must here suffice.

Take a patient suffering from a severe infection—puerperal, for instance; all the organs are affected and are working badly, the temperature is about 104°; in ten minutes 1300 or 1400 grammes of saline solution are injected subcutaneously. Before half of that amount has been reached, the improvement is manifest. The pulse becomes more regular, fuller and stronger; respiration is deeper and less hurried; and possibly the temperature falls a degree at the end of the injection. The patient feels better, is brighter, and possibly desires to urinate, but not any great amount.

Usually the patient now enters what is known as the critical stage, which comes on generally in four or five minutes, though it may be delayed to half an hour. There is a violent chill, with a sensation of extreme cold, strong, rapid pulse, and a rapidly rising temperature (104°–106° in the space of an hour). The chill is succeeded in from forty to sixty minutes by a feeling of heat, with flushed face, injected conjunctivæ, and labored respiration. Pulse and temperature are unchanged. Water makes its appearance in quantities through the pores of the skin, the kidneys, and sometimes the intestinal tract.

Three or perhaps four hours later the real improvement becomes manifest, the temperature sinks to normal—often very rapidly—and convalescence is entered upon. In severe cases the improvement is only temporary, and the injections have to be repeated in thirty-six or forty-eight hours. In still other cases the injections have little effect in staying the fatal issue.

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the heart beats again with its usual force, and the anemia of the nervous centres disappears. The injections produce hemostasis in a twofold way—by exciting the contractors of the torn arterioles, and by the precipitation of hematoblasts, thereby favoring clotting of the blood.

In infectious cases the mode of action is still very obscure. It is not a simple mechanical one, by which bacteria and toxins are washed out through the skin, kidneys, and intestine—a "lavage of the blood," as it has been called. The quantity of fluid used is too small for that, and an actual toxuria has not been proven. No, the action is more complicated.

In infection, all the general symptoms point to an intoxication whose effects are especially evident upon the nervous system. The rapid effect of injections can only be explained by a destruction of the toxins or an almost instantaneous increase in the resisting power of the body. But the transformation of toxins by the injection of 1200 grammes of salt water is problematical, to say the least. Still it has been thought possible, by Chorrin. On the other hand, that the physiological resistance manifests a renewed and intense activity seems more likely.

Phagocytosis undoubtedly plays an important part in the protection of the tissues. It may be that the gravity of infection is due in part to an insufficient activity of the leucocytes. This in turn may be due to hypertoxicity of the blood. Perhaps the salt water reduces this toxicity by simple dilution of the blood, and conveying to all parts the nourishment necessary for cellular activity, thus renewing the strife between the forces of infection and resistance.

This theory is based on too scanty facts, it is true, but as far as known the results of saline injections are comparable to those of the injection of antitoxic serum—*i.e.*, they produce disintoxication.

If this theory is admitted, the explanation of the symptoms which follow is easy. Freed from the influence of the poison, the nervous system resumes its action. The increased quantity of fluid and the better nervous action give a stronger and more regular pulse, and the kidneys and skin in consequence resume their functions, and the temperature gradually returns to normal.

The indications for the use of saline injections after the profound hemorrhages are absolute, and intra-venous injections are preferable to subcutaneous ones on account of their more rapid action. In serious infections (acute peritonitis, puerperal or traumatic septicemia, tetanus, eclampsia), where a temperature of 103° or higher shows a grave pathological condition, this method of treatment should be applied in connection with sustaining treatment.

Claisse concludes that "These large injections of saline solution ought to be employed with judgment and prudence, as a very powerful therapeutic resource." In them we possess an agent which, logical in theory, approved by experiment and clinical experience, is able to give happy results in conditions which have hitherto seemed beyond the resources of medicine.—Editorial in *Medical News*, October 17, 1896.

TREATMENT OF INTESTINAL INTUSSUSCEPTION.

The statistics of RYDYGIER show twelve cases of intussusception, with three cures. Rydygier recommends the resection of the intussusceptum, as has already been done by Koenig, Lesczynsky, Senn, J. Rosenthal, Jessett, Barker, Bier, and others, but always with too little attention and care. The technique has not been established by these cases. Perhaps the best operation is the Jessett-Barker procedure—laparotomy and search for the invagination, with the application of a furrier's suture, after the method of Lembert, around the neck of the intussusception. If the vitality of the neck is questionable, before applying the suture the intussusceptum should be pushed in a little farther. A longitudinal incision is then made in the convexity of the intussuscipiens, long enough to permit the intussusceptum to be drawn out through it. The intussusceptum is then cut through near the neck for about one-third of its circumference, the incision beginning on its convex side. Through the opening thus made, the finger is passed into the innermost lumen to discover the permeability of the canal and to prevent the too deep passage of the sutures. Four sutures are passed through both layers of the intussusceptum at the place of amputation, passing in and out, and tied on the outside. When the last suture, which is passed so as to include the stump of the mesentery, has been tied, the amputation of the intussusceptum is completed. If the amputated portion of the bowel cannot be drawn out, as may rarely occur, and as was the case in Leszcynsky's case, it may be left to be passed with the

stools. The long opening in the outer segment is then closed by a Czerny suture. If this opening cannot be closed longitudinally because of the swelling of the retracted stump of the intussusceptum, it must be closed transversely after the method of Heineke-Mikulicz.

The advantages of this sort of resection are that: (1) but little intestine is sacrificed; (2) the tying off of the mesentery is accomplished in one stroke; (3) the suture is applied in the shortest possible time. Only when gangrene has involved the outer sheath of intestine is resection of the whole mass to be done.

Rydygier then advises, in cases of acute intestinal intussusception:

1. Operation should be done as soon as possible, after the bloodless therapeutic attempts have been carefully carried out without result.

2. After celiotomy has been performed, disinvagination is the procedure of choice before all others when it can be carried out without especial difficulty. If the intestinal wall is in a questionable state of vitality, especially at the position of constriction, the diseased area should be drained with a strip of iodoform gauze, and excluded from the peritoneal cavity.

3. Where the disinvagination cannot be done, resection of the intussusceptum, after the above-described method, is the operation of preference.

4. Resection of the entire mass is to be performed when the invaginating sheath shows marked changes, or when perforation is feared.

5. The formation of an artificial anus and the operation of entero-anastomosis are of little use in acute intussusception. The danger of imminent collapse is the only reason for making an artificial anus.

Chronic intestinal intussusception justifies an attempt at bloodless therapy. Temporizing without especial reason is bad practice, for acute changes for the worse may develop, which are quite as dangerous as acute intussusception.

Disinvagination is here, too, the first operative procedure which should be attempted. Four cases of this sort are on record. In Rydygier's first case disinvagination was done at the end of six months, and in the second case after nine months; in Czerny's case it was done after six months; and in Obalinski's case after ten weeks. All four cases recovered.

When disinvagination cannot be done, resection of the intussusceptum is more strongly recommended than in the acute cases.

Entero-anastomosis is indicated only in case of extensive adhesions, and, in contrast with acute intussusception, several cases of recovery have been recorded. There is no real indication for the formation of artificial anus in case of chronic intussusception. The conclusions reached concerning chronic intussusception are as follows:

1. The bloodless method should always be tried, with repeated attempts, but without too long temporizing.

2. At the time when the patient is free from acute symptoms operation should be done.

3. After opening the belly, disinvagination should be tried. If this cannot be done, resection of the intussusceptum has great advantages over the same operation in acute cases.—*Annals of Surgery*, August, 1896.

THERAPEUTIC INDICATIONS FOR EMPLOYING MASSIVE SUBCUTANEOUS INJECTIONS OF ARTIFICIAL SERUM.

DURET (*Rev. Med.-Chir. des Maladies des Femmes*, June 25, 1896), in a lengthy paper upon this subject containing minute reports of a series of cases, states that massive injections of artificial serum have been employed under the following circumstances: for hemorrhagic collapse following wounds or crushes; for puerperal hemorrhage; for operative hemorrhage; for serious traumatic shock; for post-operative or any of the surgical forms of septicemia. It has also been employed in the treatment of uremia due either to urinary infection or albuminuria, or any of the divers toxemias — this treatment is credited with five favorable results, one case terminating fatally.

Duret believes he saved a patient from shock-death by injection.

The septicemia cases are more numerous. Thus Michaud, of twenty-five cases saved five; Monod had three successes in seven; Duret three successful cases out of four. Lejars' case is perhaps the most striking one: the intestine was ruptured by the kick of a horse, and when the belly was opened fecal matter was found to be generally diffused through the peritoneal cavity; the consecutive septicemia was relieved and the patient cured after five days, thirty quarts of serum having been injected in that time. A case

of intestinal perforation following typhoid fever terminated less fortunately.

Of the two methods adopted of making the injection, namely, subcutaneous or intravenous, the latter is more difficult. The subcutaneous method is without danger and is thoroughly efficacious, provided it is adopted in time and is properly applied.

The author himself has used these injections in twelve cases, four of post-operative septicemia, four of puerperal septicemia, one of shock, two of hemorrhagic collapse, and one of urinary infection; ten of these recovered. This is a remarkable showing, since under ordinary treatment the mortality would have been very much higher.

This method, to be successful, should be properly applied. The liquid should be driven in under steady pressure, otherwise it does not readily penetrate into the general circulation; ten to twelve minutes should be allowed for the absorption into the cellular tissues of about a quart of the serum. The apparatus required is thus constructed: in a bottle which contains a little less than a quart is placed a rubber cork with two holes in it, through which pass two bent glass tubes, one long enough to reach to the bottom of the bottle, the other short, just passing through the cork. The flask having been filled with the liquid, the long tube is protected by a pledget of antiseptic cotton, thus allowing clean air to pass through it; to the other glass tube is attached a rubber tube, which in turn is slipped over the syringe end of a large hypodermic needle. The bottle is inverted, and the needle is driven into the cellular tissues.

The author holds that the essential feature of these injections is that they should be massive and repeated. They should thoroughly flush out the blood-channels through the kidneys and skin. An injection is given two or three times a day, sometimes more frequently, from two to three pints being injected each time. One of the reported cases will perhaps best show the method of using this treatment:

The patient, twenty-two years old, was delivered at full term of a healthy boy. The midwife, finding that the placenta was slow in following, introduced her hand and delivered it artificially. Lochia were abundant the next day, but on the second day they diminished and became fetid. At the same time the patient suffered from cephalalgia, rapid heart action, vomiting, and high temperature. The uterus was curetted, but very little debris came away. On the third day after delivery, in spite of free ingestion of liquids and energetic thermic and purgative treatment, the symptoms became markedly worse. The abdominal facies was distinctly marked. The pulse was weak, thready, and running at 150; respiration labored; temperature 103°. Fourmeaux injected three pints of serum at half-past 4 in the afternoon, thrusting the needle into the left flank. The patient sweat freely, the tongue became moist, and at 8 o'clock in the evening the temperature had gone down to about 101°. A little over a pint of serum was then given, and a vaginal injection followed. The patient was restless and delirious during the night. The following day, the fourth after delivery, her temperature was over 102°. At 8 o'clock in the morning, over two pints of serum were given; at 4 o'clock in the afternoon, three pints; at 7 o'clock in the evening the patient had a violent chill. A bad night succeeded, and on the fifth day the patient was restless, delirious, and suffered from diarrhea; at 2 o'clock in the afternoon she was given two quarts of serum; after this she sweat profusely, passed a large quantity of urine, suffered from diarrhea, and the temperature dropped to a little over 100°; at 8 o'clock in the evening 2½ pints of serum were given in the left armpit. On the sixth day there was marked improvement. On the seventh day a purgative was administered and acted freely. As a point worthy of note, it may be mentioned that, in spite of the pronounced depression, mammary secretion was maintained under the influence of the serum, and the milk had to be drawn several times. In all, twelve quarts of serum were injected in five days.

NEW TREATMENT FOR EXOPHTHALMIC GOITRE.

GAYET reports, in *Lyon Médical*, No. 30, 1896, Jaboulay's treatment of Basedow's disease by section of the cervical sympathetic. The patient, aged eighteen, exhibited goitre. When thirteen years old she noticed a growth in the neck. Following nervous shock this growth suddenly exhibited all the symptoms of goitre—dilatation of the thyroid, tachycardia, palpitation, breathlessness. Shortly afterwards profuse diarrhea set in, which became chronic; menstruation became irregular. Later, heart disease was complicated by distinct icterus. The exophthalmos was very marked. The tumor was as large as the fist and changed its dimensions, a thrill was distinctly felt, and bruit was apparent on aus-

cultation. The patient was etherized and an incision three inches long was made, beginning two fingers' breadth below the mastoid process, running parallel and close to the posterior border of the sterno-mastoid muscle. The muscle was retracted, and by means of a grooved director the vascular and nervous structures were exposed. The internal jugular vein, the carotid and the pneumogastric nerve were drawn forward after the deep cervical aponeurosis which held them in place had been bared, and the gray vertical cord of the sympathetic exposed. On irritating it, the pupil became dilated. The cervical ganglion was then cleared and cut away, together with four or five of its efferent branches. The trunk was divided below the ganglion. The same operation was performed on the right side, excepting that the trunk of the nerve was divided above the ganglion. On the same evening the exophthalmos had entirely disappeared. The conjunctiva was a little congested, and the right ear was engorged and anesthetic. The following day the improvement continued: the tumor was smaller and tachycardia less troublesome. On the seventh day the pulse-rate had run down to 100. Acuity of vision was perfectly normal. The patient quitted the hospital on the eighth day, apparently well.

The methods of treatment adopted in the therapeutics of goitre are:

1. More or less complete thyroidectomies, or more or less complete enucleation after Socin's method.
2. Exothyropexy.
3. Ligature of the thyroid arteries.

Complete thyroidectomy is no longer practiced, because of its sequel, myxedema. Enucleation is only possible in certain forms of the growth. Incomplete thyroidectomy is the method of choice, perhaps, by the majority of surgeons: eighty per cent. get well. Sometimes, however, exophthalmic growth is increased by this partial operation. There is often recurrence. Moreover, the operation is difficult and dangerous. Sometimes, as a sequel of the operation, there is what might be called hyperthyroidization—that is, the symptoms of thyroid intoxication develop due to the absorption of thyroid secretion through the open blood-vessels.

As to the results obtained by exothyropexy, or the simple exposure of the exophthalmic goitre: although the operation itself is less serious, it is not always curative, and often does not relieve exophthalmos. Occasionally symptoms of intoxication follow.

Ligature of the thyroid arteries is difficult.

Section of the sympathetic is neither dangerous nor difficult. It powerfully affects the triad of symptoms, and this effect is permanent, especially after exophthalmos. It can be practiced concurrently with other interventions, provided they have not diminished the exophthalmos.

THE REMOVAL OF OLD ECTOPIC GESTATIONS.

VON HERFF (*Ztschr. für Geburts*, bd. xxxiv, heft 1) concludes from his study of these cases that in removing ectopic gestation-sacs which are complicated by adhesions it is important, whenever possible, to ligate the uterine and ovarian arteries. An attempt should then be made to shell out the sac, beginning at the periphery of the placenta, using clamps and ligatures to control bleeding. The aperture left should be tamponed with gauze. In rare cases the site of placental attachment must be compressed by a running stitch; compression of the aorta must be employed or removal of the uterus, with application of clamps to the bleeding vessels. Gauze packing is especially valuable where oozing exists or secondary bleeding is feared. —*American Journal of the Medical Sciences*, August, 1896.

A COMPACT, PORTABLE STERILIZER FOR SURGICAL INSTRUMENTS AND DRESSINGS.

WETHERILL (*University Medical Magazine*, August, 1896) states that sterilization of all materials which must be used in surgical work is now believed to be most easily and certainly secured by boiling, or by exposure to steam at the temperature of boiling water.

To secure the destruction of pyogenic organisms by this means, many forms of sterilizers have been devised, and those for use in hospitals or sanitaria have reached a point of perfection which makes them very satisfactory.

Portable sterilizers are to be found in the shops and instrument-stores, but they are unnecessarily big and unwieldly for carrying, and at the same time sufficient room is lacking in the steam-chamber for all the towels, gauze, and dressings needed in a modern major operation. The sterilizer devised by Wetherill is small, portable, and capacious.

The surgical instruments are boiled in a soda solution in a pan about fifteen inches

long, seven inches wide, and three inches deep. The steam-chamber rests on the top of the instrument-pan, has a perforated bottom, and is made with an extra section so that its capacity may be nearly doubled if necessary. For minor operations, where only a small amount of dressing material is needed, the increased space in the steam-chamber will not be required. The cover is made to fit the steam-chamber with or without the extra section.

When extended to its greatest capacity the steam-chamber has an area of about 800 cubic inches (for dressings), the water-pan about 300 cubic inches; the latter will accommodate an instrument fifteen inches long. These dimensions may be varied by the manufacturer to suit the needs of any class of work or the fancy of any particular operator.

The joints between all these parts are tight, and little steam escapes through them when the water is boiling actively.

The temperature of boiling water is easily secured and maintained in all parts of the steam-chamber, and the sterilization of materials put in it must be complete for all practical purposes if the process is kept up for twenty or thirty minutes. Very dense wads of thick material might need more time, but gauze towels and the dressings ordinarily used certainly would not.

Dressings come out of this sterilizer after a half-hour of steaming only slightly moist, not damp enough to interfere with their absorbing quality. If, however, perfectly dry dressings are desired, it is an easy matter to bake the contents of the chamber thoroughly by taking the latter from the instrument-pan and placing it on its side over the lamp or stove for a few minutes, thus at once drying the contents and doubly sterilizing them.

As a means of applying heat when other sources are not at hand, a lamp has been added to the instrument, and as it boils the water in the pan in from two to four minutes, depending on the quantity, and will hold enough alcohol to keep it going for the time necessary, its use must often prove advantageous.

Two troughs, three-quarters of an inch wide, ten inches long, with a slot a half-inch wide between them for the free circulation of air, are set on legs three-quarters of an inch high. This lamp is filled with alcohol and set in a lamp-pan with holes made in its sides for the admission of air. The bottom of the lamp-pan is covered with water to the depth of half an inch, to prevent the burning of the table on which it is placed, and as a precaution against fire in case the lamp is upset, or overflows as the burning alcohol becomes hot. An asbestos-lined cover is provided as an extinguisher, but the easiest way to put out the flame is to dilute the alcohol remaining in the lamp by the addition of a little water, when it soon goes out.

The whole instrument is made of copper (tin-lined) and is so constructed that it telescopes or nests, one part inside another, and when packed for carrying it is only seventeen inches long, eight inches wide, and five inches high. It goes easily into an ordinary cabin-bag or telescope-bag of leather or canvas, and leaves ample room for surgical instruments, operating-coats, dressings, rubber pads, etc.

THE MECHANICAL TREATMENT OF INGROWN TOE-NAIL.

Dr. HENRY LING TAYLOR, of New York, recommends the following method, modified from that advised by Mr. Masters, of England: A flat strip of silver, one-hundredth of an inch thick, one-eighth of an inch wide, and one inch long, is bent into the shape of a fish-hook. The toe having been cleansed with peroxide of hydrogen and moistened with a solution of cocaine, the hook is inserted under the lateral edge of the nail so that the shank of the hook curves over the side of the toe and lies close to it. The greater the ulceration the less the pain in inserting the hook. It is retained in place by adhesive plaster or a bandage. The hook not only protects the flesh from the nail, but it exerts a lifting action on the nail. After a few hours the patient suffers no inconvenience from the hook, and in a few days the swelling subsides and the granulations become more healthy. It is well to wear the hook for several weeks after the tissues have healed.—*International Journal of Surgery*, September, 1896.

OPERATIVE TREATMENT OF MULTIPLE PAPILLOMAS OF THE LARYNX.

Papers on this subject were read by Navratil and Neumann at the late meeting of the Hungarian Society of Otologists and Laryngologists (*Revue Hebd. de Laryngol., d'Otol. et de Rhinol.*, 1896, No. 4).

NAVRATIL contends that while endolaryngeal extirpation usually succeeds in simple papilloma, whether in the adult or in the infant, the result is different in multiple papil-

lomas when they obstruct the calibre of the larynx and give rise to dyspnea. Here it is necessary to practice prophylactic tracheotomy first, and then to undertake the extirpation of the papillomas; in this his method differs in the infant from that applicable to the adult. In the infant he used to perform laryngotomy and endeavor to remove the papillomas along with the subjacent mucous membrane. Many cases had been operated upon in this way, but recurrence had taken place, though less rapidly than after the endolaryngeal method. He attributes these recurrences to the limited field, which does not permit precision in operation. Of late he has performed his tracheotomy, and then extirpated the papillomas in several sittings, partly through the mouth and partly through the wound; and for two or three years he has had no recurrences in these cases.

In the adult, where the conditions and space are more favorable, he performs laryngotomy immediately after tracheotomy, and extirpates the papillomas with their base. In this way he has avoided recurrences. While he has observed no untoward results after repeated endolaryngeal operations in infants, he has three or four times seen the consecutive formation of epithelioma in adults.

NEUMANN, after calling attention to the great tendency to recurrence of papilloma in infants (so great that a half-pint bottle might have been filled with the growths removed from one infant in four years), states that cure seems to depend less upon radical operation than upon extinguishment of the power of reproduction, which, unfortunately, does not cease for years. He mentions an interesting case in which the papillomas disappeared of themselves, probably by spontaneous absorption, and he believes this observation to be a unique one. But, although the occurrence is rare, it has been reported before. An infant, six years of age, about whom he was consulted in the winter of 1892, had been hoarse for two years and completely aphonic for several months. Both vocal bands were covered with papillomas. These were removed in the course of three weeks at different sittings; but although the larynx was cleared out, the irritated borders of the vocal bands would not permit loud phonation. Two or three weeks afterward the patient recommenced to respire with difficulty, the separation of the vocal bands having become insufficient. The vocal bands became inflamed, and there were two or three recurrences of these conditions. The stenosis augmenting, the patient was sent to the hospital for purposes of intubation. Intubation suppressed the dyspnea, and the respiration remained free for a couple of hours after the removal of the tube. The recurrences increased, and it was feared that portions had been forced by intubation into the trachea, as the papillomas covered not only the vocal bands but the free border of the epiglottis also. Toward the end of February, 1893, Dr. Kavacs performed tracheotomy, which relieved the dyspnea. The papillomas now appeared to diminish in volume. When Dr. Neumann examined the patient in the autumn he was astonished to find that the vegetations on the epiglottis had become completely reabsorbed, while only one papilloma was to be seen in the anterior wall of the larynx. This also gradually disappeared of itself, since it certainly was not expelled by cough.—*American Journal of the Medical Sciences*, August, 1896.

HYGIENIC PRINCIPLES IN THE PREVENTION OF EAR DISEASES.

FRIDENBERG (*Medical News*, August 8, 1896) states that his paper is justified by the prevalence of acute and chronic naso-pharyngeal affections under local climatic conditions of rapidly varying temperature and humidity, the frequency and danger of complicating diseases of the organ of hearing, and the common neglect of hygienic measures, which are, for the greater part, simple and effective. Under normal conditions of health the organism may give shelter to many microbes, some of them pathogenic in nature. The latter are held in check by the vital antisepsis of the blood, the energy of the cell, and the power of resorption and metabolism of the organs. A further defense is afforded by the impermeability to germs of the normal epithelium, and by the antagonism existing between species of micro-organisms or their respective physiological products.

The commonest path of aural infection is from the naso-pharynx through the Eustachian tube. Under normal conditions, the reflex action of swallowing causes the renewal of air in the tympanic cavity. If this automatic ventilation be disturbed, the consequences soon become unpleasantly apparent in a diminution of hearing. The physiological ventilation may become a source of danger, to which are added other and more violent reflex movements, such as coughing,

sneezing, or vomiting. These reflexes overcome the muscular bar of the Eustachian tube and cause a sudden rise of air-pressure, which, though but momentary, is strong enough to force into the middle ear some material from the naso-pharynx, as mucus and any micro-organisms that may be present. As evidence of this, the frequency of middle-ear complications in epidemics of acute and subacute naso-pharyngeal affections may be cited; but without any mechanical assistance, pathogenic organisms may traverse the tube and produce the tympanic complications not unfrequently observed in pneumonia, typhoid, scarlet fever, and other infectious diseases.

Less frequently, but no less certainly, the blood carries the agent of infection to the affected organ of hearing, or inflammatory products may be transported and become lodged in the terminal blood-vessels of the middle ear, as may be the case in septic endocarditis and in pyemic conditions. Finally, we must not forget that a possible, although rare, mode of infection is offered by the presence normally, as observed by Zaufal, of pathogenic germs in the tympanic cavity, which may, under favorable circumstances, become virulently active. Besides these internal paths, the ear may become affected from without, as it most frequently is in disease of the external ear, and as a complication of involvement of contiguous parts. Injuries and inflammatory processes of the auricle and meatus may affect only the external ear and the adjacent structures, or may cause general infection; again, the inflammatory process often extends to the barrier between the external and the middle ear, with destruction of the drum membrane and rapid development of middle-ear inflammation. Even without perforation of the tympanic membrane, the pathogenic process may penetrate, by means of blood and lymph channels, to the deeper structures.

A knowledge of the methods of aural infection should guide us in our therapeutic and prophylactic measures. First and foremost is the importance of a proper hygiene of the naso-pharynx, in health as well as in disease. The care of the mouth and pharynx should be so habitual, as its importance is so obvious, that it might seem superfluous to call attention to the necessity of keeping the teeth clean and the recesses of the mouth and throat free from all foreign matter. Unfortunately this is not the case. These manipulations are frequently neglected through ignorance or they are performed at irregular intervals and in an incorrect and inefficient manner. A perfunctory brushing of the teeth on rising in the morning, and so-called gargling with a few drops of a mouth-wash, are considered by many sufficient for the subsequent twenty-four hours, and the products of fermentation and decay, with their micro-organisms, are left undisturbed for a whole day. Besides this, the conditions for decomposition are made more favorable by the state of the mouth and naso-pharynx during sleep. The rational deduction is that the most careful cleansing of teeth should take place at night and again on rising, for, in spite of all such measures, the buccal cavity will be found full of micro-organisms in the morning; and perhaps a less careful toilet of the mouth should follow each meal. If these simple hygienic measures were systematically and energetically applied, especially in childhood, we might hope for fewer complaints of foul breath, weak stomach, or decayed teeth; not only this, but the mucous membrane of the mouth and pharynx would become toned and strengthened against infectious diseases.

The most important prophylaxis in any epidemic is the care of the buccal cavity. Lavage of the throat is so carelessly done as to be in most cases practically useless. The fluid at most rinses the mouth, and does not reach the back of the pharynx, the tonsils, etc. Besides this, the method is a false one and its results a failure. Tough mucus cannot be removed in this way, even if the fluid did reach the deeper parts. A more rational procedure is the pharyngeal douche. A small amount, not a mouthful, of fresh, cold water should be used. The chin is now raised and the fluid allowed to run slowly back by its gravity, without any attempt at gargling. When the fluid reaches the lowest part of the pharynx, it causes a sudden, brisk, reflex contraction of the pharyngeal muscles, which, assisted by a forward inclination of the head, is amply sufficient to empty the contents of the mouth. This simple process may be repeated three or four times. By this method the lower portions of the throat are reached and, above all, the energetic spasmodic muscular action effectually dislodges all tough adherent mucus. Where there is a tendency to catarrh or sore throat, antiseptic solutions may with advantage be substituted for pure water. In addition to these local measures we must consider the value of regular exercise, fresh air, cold baths, pulmonary hygiene, and breathing exercises.

However we may be disposed to neglect these procedures in health, the presence of local or general disease increases our responsibility and the necessity of rational hygienic measures. Nasal or pharyngeal catarrh, whether idiopathic or symptomatic of measles or scarlet fever, is frequently complicated by acute middle-ear affections. The disease brings with it the necessity of freeing the nasal cavity at frequent intervals; and the simple blowing of the nose, if violently or carelessly done, as is usually the case, may be a source of danger. It should be done as seldom as possible, as violent blowing only adds to the existing irritation and congestion. If this is not sufficient, the mucus must be made less consistent and removed by an alkaline douche. Both nostrils should never be closed at once, and no hairpin or similar utensil should be used. Therapeutic measures which occasion a local rise of air-pressure, such as Politzerization or the use of the Eustachian catheter, are distinctly contraindicated during the acute stage of such affections, especially if there is complaint of pain in the ear. The pain often indicates that there is already a congestion or inflammation in the tympanic cavity, and these procedures may drive the infecting matter into the recesses of the mastoid, with the most serious results. We must be on our guard in the case of infants and little children, and consider at all times the possibility of ear complications when restless sleep, peevishness, and crying might suggest intestinal parasites, colic, teething, or what not. Frequently a discharge from the ear is our first intimation of the real state of affairs. In such cases, or when patients are apathetic or comatose, as in typhoid, pneumonia, meningitis, and similar diseases, the ear-drum should be frequently inspected. In chronic affections of the naso-pharynx, aural complications are so frequent as to be the rule. Chronic hypertrophic catarrh, with adenoid vegetation in the pharyngeal vault, is notable in this respect. Digital exploration is usually the simplest and most effectual diagnostic method, as posterior rhinoscopy may be impracticable with unruly or frightened children. The local action of adenoid hypertrophies may cause a direct affection of the Eustachian tube by occlusion of the pharyngeal ostium and consequent retraction of the drum by rarification of air in the tympanic cavity, or their presence may cause repeated attacks of catarrh, which sooner or later extend to the middle ear. The breathing is affected markedly, and hearing not infrequently diminished. Although forced to operate in most cases, much may be done in mild forms by insistent local treatment. Direct application to the nasal passages of weak nitrate-of-silver solutions or of iodine-glycerin, five to ten per cent., acts well in almost all cases, when used at an early stage. The reaction may be severe, however, and for this reason it is advisable to apply the solution to one passage only at each sitting. The cotton pledget should be tightly wound on an angular carrier or forceps, and there should not be enough fluid to allow any dripping into the pharynx. Two or three days should elapse between the applications. The nasal douche is decidedly inapplicable here, as in all cases of naso-pharyngeal obstruction fluid easily enters the Eustachian tube and may be aspirated into the middle ear. Massage of the nasal mucous membranes has been advocated, and good results are claimed for it by several authors.

The use of a nasal douche should be governed by a few simple but stringent rules, if it is to remain a beneficial measure and not become a source of danger. The bulb of the fountain syringe, if this is used, should be directed horizontally backward, not upward; the bag should be hung not more than one foot above the nasal passage. The head should be inclined forward slightly, with the mouth open. The douche fluid should be slightly warmed. The nasal douche-cup or spoon is even better than a fountain syringe, or the fluid may simply be snuffed up from the palm of the hand.

The necessity of removing hypertrophic tonsils as a prophylactic measure against ear disease is self-evident. For the same reason, congenital fissure of the hard and soft palate should be treated.

A consideration of all the possible causes of aural affections brings us finally to the communication from without through the external auditory meatus. Inflammation of the auricle or meatus may be propagated directly by extension or by transportation in blood or lymph channels. The custom of piercing the lobule for wearing of ear-rings has been responsible for many cases of this nature. A greater menace lies in the careless or incorrect cleaning of the meatus. The majority of instruments used for this purpose—ear-spoons of metal, rubber, ivory, or bone—are of doubtful utility, or absolutely dangerous. Small sponges on holders are a source of infection, rather than of asepsis or cleaning. The ear-

spoons, especially those of metal, easily cause abrasions of the epithelium and small erosions, which may become infected and result in furuncles or phlegmonous inflammation. The use of the ear-douche is but little better: the epithelium is soaked and macerated, and when dry becomes a source of irritation. Oil, glycerin, and other substances of a similar nature, are inappropriate, on account of their tendency to become rancid. The most rational method of cleaning, which is perfectly thorough, may be accomplished by using a small tuft of absorbent cotton, not a large pledget, tightly wound about a blunt and smooth toothpick, the end being left loose and fluffy. In case the cerumen is hard, the cotton may be lightly dipped in soap-water or moistened with a drop of ether. Another source of serious inflammation of the ear is the presence of foreign bodies in the external meatus, and more particularly unskillful or violent attempts at their removal. Instruments are never to be used in these cases, especially when the foreign body is hard or brittle, as they invariably fail to grasp the offending object, but push it still deeper into the ear. Our sovereign remedy here consists in syringing. This is effectual in nearly all cases, unless the foreign body is very voluminous or has entered the ear with great force. Under these conditions extraction under an anesthetic may be our only expedient.

Injuries of the ear not infrequently produce a rupture of the drum, whether caused by a blow, entrance of a foreign body, or by sudden change in atmospheric pressure. Here, too, the original lesion may be less dangerous than misguided therapeutic efforts. All washing, syringing or instillations are contra-indicated, at least directly after the injury. If the rupture can be seen, a loose tampon of absorbent cotton is all that is needed. In case there has been a free hemorrhage and our view is obstructed, the blood-clot may be gently wiped away with cotton on a holder. The patient should be cautioned to avoid all procedures which would cause a rise of air-pressure in the tympanic cavity, and especially to use no force in blowing the nose. The use of syringes is unequivocally condemned. Prompt healing will generally take place under the aseptic blood-clot, if this be left undisturbed. Even after a discharge has begun, much more can be accomplished by dry-cleaning by mopping with cotton or gauze than by flooding the passage with fluid. The warning against syringing must be especially marked in case of serous discharge, where traumatic communication with the cranial cavity may reasonably be suspected.

Another source of danger, although of a less serious nature, is the common tendency to alleviate toothache or facial neuralgia by the use of hot oil, pledgets of cotton dipped in chloroform, oil of cloves, or other counter-irritants placed in the auditory canal.

In health we must also guard against the mechanical injury of the heavy surf at our seaside baths. Complaint of fullness and pressure in the ear after bathing, with diminution in hearing, is usually due to the swelling of cerumen by the action of the water. The symptoms promptly subside when the wax has been syringed out. Even in case of an old perforation of the drum, the patient need not be deprived of the hygienic benefit and pleasure of sea-bathing. We need only suggest plugging the meatus with cotton which has been partly dipped in oil. If we neglect this, the entrance of sea-water may be followed by an acute empyema of the mastoid, or by the relapse of an old discharge.

DIAGNOSIS AND IMPORTANCE OF THE PLACENTAL INSERTION.

LINDSTROM (*Hygiea*, February, 1896) has examined 100 women by the Leopold-Palm method for diagnosing the placental insertion during pregnancy or labor. This method is founded on the fact that the places of insertion of the tubes and round ligaments are displaced by the enlargement of the placental site in a direction opposite. The shape of the uterus is also different, becoming more round or oblong according to the high or low insertion of the placenta. The position of the tubes and round ligaments is found by palpation through the abdominal wall; this can be more easily done during a contraction. By further confirming the shape of the uterus, four principal types can be made out. If, for instance, the uterus is round and the tubes and ligaments are inserted deep down on its anterior surface, the placenta will be inserted on its upper and posterior surface. The author confirms his diagnosis between the sixth and eighth day after delivery, when the placental site can be easily recognized and there is less risk of infection. The diagnosis was found correct in ninety-two per cent. of the cases. In forty-five the placenta was inserted on the posterior, and in thirty-three on the anterior surface; in ten

cases the fundus was the place of insertion, and in twelve one of the tubal corners. Eighteen patients suffered from more or less severe atonic hemorrhages in the puerperal state; in thirteen of these cases the placental site was low down. The author believes that post-partum hemorrhages are more common with a low insertion of the placenta, and attempts to explain it by the following hypothesis: If the placenta is partly inserted below the contraction ring of Schroeder, and thus on the lower uterine segment, which does not take any active part in the uterine contractions, it may be first detached from the upper, stronger part, still adhering to the lower, weaker part below. It will then act as a foreign body in the uterus, preventing the upper part from contracting further, and hemorrhage occurs. Or, the placenta may be completely detached, but the lower, weaker part, through its deficient contraction, is unable to close the vessels, and the bleeding persists. The author further noticed that the labor was of a comparatively longer duration in those women who had their placenta in either of the tubal corners (twelve per cent.). The reason for this would be the oblique direction in which the expulsive force comes to act, through the difference in its components.

Apart from the theoretical interest and the important help which this method of clinically diagnosing the placental site gives to the obstetrician in performing Cæsarean section, *partus arte provocatus* (Krause's method), and the manual detachment of the placenta, the author considers the method especially valuable as a means of prognosis, both as regards the duration of labor and the danger of an eventual post-partum hemorrhage.—*British Medical Journal*, July 4, 1896.

THE NEW JOINT AFTER SUBPERIOSTEAL RESECTION OF THE ELBOW.

LOISON (*Revue de Chirurgie*, May, 1896) gives a full report of the condition of parts in a pseudarthrosis of the elbow examined after death, in a woman on whom Ollier, nine years previously, had excised this joint for tuberculous disease. The author's researches have led him to form the following conclusions with regard to the value of subperiosteal resection in cases of tuberculous osteoarthritis: The subperiosteal method when applied to such joint affections results under favorable conditions in complete cure of the tuberculosis, and in restoration of the functions of the joint. In instances of relapsing tuberculosis after subperiosteal resection the new joint often remains free even when many other parts and structures are invaded by the bacillus. Preservation of the periosteum of the extremities of the resected bones favors an osseous reproduction, which, in adults, is manifested rather by thickening in the transverse diameter of the bone than by elongation of its shaft. Processes or tuberosities are formed which give to the elbow its original form. At the same time the preservation of the ligamentous and fibrous structures (the periosteo-capsular sheath) ensures the lateral solidity of the joint whilst permitting all the normal movements. A perfect ginglymoid joint is thus formed, free from lateral mobility and capable of complete movements of flexion and extension. Pronation and supination movements may be restored if the bones have not been previously anchylosed in the course of the disease. Such osseous adhesions it will often be found impossible to destroy.—*British Medical Journal*, July 4, 1896.

EXTIRPATION OF THE RECTUM PER VAGINAM, WITH UTILIZATION OF THE VAGINA TO REPLACE THE LOST RECTAL TISSUE.

BYFORD (*Annals of Surgery*, November, 1896) states that among the advantages of the vaginal method might be mentioned the following:

The vagina can be made to take the place of the extirpated portion of the rectum.

The excision can be done as high up as by the sacral method and with less traumatism, and, in case the peritoneal cavity is opened, with less danger.

An intra-peritoneal exploration of the tissues about the rectum can be made before disturbing the rectum.

If the operation has to be abandoned after the incisions are made, the wound is less formidable and in a better place.

The patient is more comfortable after the operation than after the sacral methods.

Price's abdominal method possesses nearly all of these advantages, but is more dangerous, necessitates a removal of the uterus, and cannot be adapted to cases extending low down in the rectum.

McArthur's method is more dangerous in cases high enough up to involve an opening into the peritoneal cavity, and in all cases involves more traumatism.

UNUNITED FRACTURES.

The most important causes of ununited fracture are an unhealthy condition of the fragments, dislocation of the fragments, and the interposition of the soft tissues. The latter has recently been looked upon as a more frequent local cause of ununited fracture than was hitherto supposed. In seven of the twelve cases of ununited fracture which came under the observation of BRUNS, the interposition of muscular tissue was found to be the cause of non-union. Ollier found the same to be the result in seven out of ten cases of resection for ununited fracture under his charge.

Of the seven cases of Bruns in which the fracture had failed to unite after two months' duration, four, on resection, showed no trace of callus-formation, and three only the slightest trace. After removal of the interposed muscular fibres in these seven cases, consolidation of the fragments took place after five months.

The examination of seventy-eight cases of ununited fracture due to muscle interposition led to the following conclusions: Fractures of the femur and humerus show a disposition to be complicated by the interposition of muscular fibres. This is due not only to the length of these bones, but also to the fact that they are surrounded by thick layers of muscle and are especially liable to dislocation after fracture. Consolidation of fragments cannot take place as long as any muscular fibres remain interposed. In ununited fractures due to interposition of muscular tissue Bruns recommends immediate operation, even in cases of recent fractures, when the restitution of the fragments by other means has failed. It is at times difficult to know whether or not a muscle is interposed between fragments. The absence of crepitus is the surest diagnostic sign. — *American Medico-Surgical Bulletin*, Sept. 12, 1896.

PROLAPSUS ANI.

DR. PLATT (*Johns Hopkins Hospital Bulletin*) resorted to the following procedure in the case of a child operated on in vain by other methods: At the junction of the skin and mucous membrane, just beneath the latter, a curved needle is inserted in the median line below, and a silk thread is carried half way around the anus and out again, in the median line above, reinserted in the same opening and brought out at the first puncture, making a purse string suture. The little finger is then put in the anus and the string tied snugly around it. Apparently, this would cause suppuration and possibly a fistula. It does nothing of the kind, nor does it cause any pain afterward. The child has his stools in the recumbent position. If the feces are at all hard, injections are given to soften them. After three weeks the suture is withdrawn, when the tract heals immediately with no return of the prolapsus. By this method the bowel is kept in place long enough to contract adhesions.—*Journal of the American Medical Association.*

TREATMENT OF OBSTINATE NEURALGIA BY PRESSURE.

DELORME (*Gaz. Méd. de Paris*, July 18, 1896) presented to the Surgical Society a man who, because of violent neuralgia, had been subjected to amputation at the wrist. This brought no relief, and a second operation higher up was proposed. Delorme, however, treated him eight times by forcible pressure, giving entire relief. This pressure is applied by the thumb and finger. The most hyperesthetic areas are picked out and are pinched with all the force of the surgeon, who is relieved by a powerful assistant.

QUENU holds that neurectomy is a serviceable procedure in these cases.

TERRIER points out that since the lesion is probably an ascending neuritis, secondary to infection, it may resist all forms of treatment, or may spontaneously recover. The infectious nature of these troubles, however, cannot be sustained, since many wounds which do not suppurate are thus complicated.

NEPHRITIS IN CHILDREN.

SULEY (*Medical News*, August 8, 1896) states that of all the diseases of childhood, nephritis demands the most prompt, vigorous, intelligent, and careful treatment. Three essential rules in the treatment must be recognized, viz.: 1. Relieve the kidneys of the extra work of carrying the transuded serum from the tissues, as well as the retained products of tissue metamorphosis usually excreted by the kidney and retained because of their damaged state. 2. Endeavor, by intelligent medication and diet, to prevent further damage to the diseased organs. 3. Restore the kidney to its normal condition.

In meeting the first indication, resort must be had to the compensatory emunctories, the skin and the bowels, and at no age can we rely upon them more than during early life. Calomel is indispensable; it stimulates the liver to action, and by the increased flow of bile the contents of the bowel are rendered more fluid and the elements to be excreted more soluble in the blood, thus proving less irritating to the kidneys. The salines are of great service as hydragogues.

Hot-air baths must be relied upon for their diaphoretic action, as pilocarpine is not to be depended upon. The best method of applying heat is by using an apparatus which will supply hot air under the bedclothes. This can be used continuously, as it does not cause prostration. Liquor ammonii acetatis is an efficient remedy in the stage of convalescence, acting beneficially upon the kidneys and the skin. The high tension in the arteries can be combated more efficiently by blood-letting than by other means, the beneficial effect of this measure being seen upon the pulse, the nervous system, and the kidneys.

A very valuable agent is water, given plain after filtration or boiling, as young children take carbonated waters with reluctance. Given *ad libitum*, or at regular intervals if the patient does not call for it, it acts as a diuretic, without causing any irritation. If refused by the mouth, it acts well as an enema if large doses are given.

TREATMENT OF ULCERS OF THE CORNEA.

E. W. Wood White (Middlemore Lecture, *Birmingham Medical Review*, vol. xxix, No. 1) thinks the protective bandage should generally be adopted to prevent irritation of the surface, but that it is contra-indicated where there is considerable conjunctival discharge and irritation, in sloughing ulcers secondary to lacrymal disease, and in young children. After corneal perforation he would use the pressure bandage. Mydriatics are of great assistance in a large proportion of cases. For painful superficial ulcers he prefers the mydriatic dissolved in vaselin or castor oil, rather than in water. Of drugs of this class, he has found the hydrochlorate of scopolamine most satisfactory. If the ulcer is extending, more active treatment is necessary: for this, he says, "the galvano-cautery has been universally used with splendid results." It is not necessary to cauterize the whole ulcer, but the advancing margin must be destroyed thoroughly. After cauterization he fills the ulcer with finely powdered iodoform or iodol. Scraping the ulcer, the dropping upon it of water heated to 150°, and daily applications of carbolic acid, formalin, or a saturated solution of mercuric chloride, are mentioned. He believes that only in rare instances is eserine the best drug to use, and that it had better be avoided by those whose experience is not large. For rapidly spreading ulcers with hypopyon, paracentesis of the cornea, with or without the entire removal of pus from the anterior chamber, or the Saemisch incision, may be resorted to.

Regarding subconjunctival injections, he finds weak solutions of mercuric chloride, 1 to 4000, less painful than strong solutions, and equally effective, but that probably the best agent for this use is a four-per-cent. solution of common salt.

The branching ulcer of so-called dendriform keratitis generally requires touching with the cautery or scraping. The absorption or faceted ulcer demands tonics and nourishing food; so does keratomalacia. — *American Journal of the Medical Sciences*, August, 1896.

HETEROPLASTIC OPERATIONS FOR SKULL DEFECTS.

Fraenkel, of Vienna, (*Verhandl. der Gesells. für Chir.*, 1895) recommends celluloid plates for closing bony openings, basing his conclusions upon experimental studies in animals in which he made artificial openings in the skull and closed them with celluloid plates. He found celluloid especially adapted to this use, and even better than the natural material, for it obviates certain objectionable results following upon the old method of closing penetrating and trephine openings in which the dura mater becomes adherent to the bone.

All living materials that can be used for closing skull defects become adherent to the dura mater; but dead material does not become adherent, for the reason that granulations springing from the surface of the dura do not penetrate into its substance.

When bone is used to fill an opening in the skull, the amount of implanted bone that will be absorbed, and how much will remain to close the opening, depends entirely upon how closely the implanted bone is in contact with its surroundings — that is, how completely it fills the bony opening. The closer this contact is, the less will be the amount of

granulation about the transplanted piece, the less will be the absorption of the foreign body, and the less alteration will attend its fixation. The inhealing of the transplanted material, in all cases, is accompanied by a greater or lesser deposit of granulation tissue which springs from the underlying dura mater, and eventually binds it to the foreign body.

Fraenkel demonstrated canine crania in which areas of bone had been chiseled out and then replaced. The healing-in took place without reaction, notwithstanding which the autopsy showed that the dura mater was grown fast to the replaced bone. But when such an opening is closed with a material which, on account of its structure, renders it impossible for granulations to penetrate its substance, granulations will not spring up beneath it, and no connective-tissue scar will result.

Fraenkel has shown, by his earlier experiments with the healing-in of foreign bodies in general, that, in cases in which asepsis and immovable fixation of the foreign bodies in the tissues have been secured, if there is no subsequent mechanical or chemical irritation there will be hardly a sign of granulation and secondary scar-formation.

In the same manner is celluloid retained in place. It does not become healed in as a part of the tissue, but remains unchanged, and without causing a change in the surrounding tissue it rests in the bone-opening as a mechanical plug, as a fixed dead body. The author reports three cases from his experience.

Statistics have been contributed by other surgeons. Billroth, Von Winiwarter, Von Fillenbaum, Weinlechner, Wölfler, Schorf and others have operated in this manner. Four cases have been reported from Wölfler's clinic. Here the circular cartilage, which was extirpated for carcinomatous involvement, was replaced by celluloid plates; the resected lower wall of the orbit was replaced by a plate; and two celluloid plates were substituted for the resected upper jaw.

An open traumatic defect lends itself well to this method. The bony defects of the skull in children are especially well treated after this manner, also pathological defects in which there is the possibility of recurrence.

Fraenkel regards the use of the celluloid plate as of especial moment in cases in which trephine openings are to be closed after operations for cortical epilepsy. He calls attention to a previous article of his, in which he remarked that the very operation which is done for the relief of cortical epilepsy can, on account of anatomical changes which result therefrom, become the cause of cortical epilepsy. These resultant anatomical changes are: the concentric shrinking of the operation wound on the one hand, and the cicatricial adhesions on the other. Both of these conditions operate together to produce more or less disturbance to the whole neighboring cerebral cortex. The first of these factors cannot be much improved or prevented; but the second factor can be quite defeated by introducing into the whole bony defect some material which, by virtue of its structure, entirely prevents such an adhesion with the dura mater; and herein lies the great value of celluloid heteroplasty over other osteoplastic methods.—*Annals of Surgery*, July, 1896.

GASTROPEXY.

DURET (*Revue de Chir.*, June, 1896) states that the good results of stitching a displaced kidney or uterus to the abdominal wall have led to the practice of an analogous operation in cases of the special form of displacement and dilatation of the stomach described by Glenard under the name of gastroptosis. A case is recorded by the author in which this affection, presented in an extreme form by a woman aged fifty-one, was successfully treated by the following operation, for which the term "gastropexy" is suggested:

The first stage consists in a median incision (about 4 inches in length) of the anterior abdominal wall in the epigastric region. The lower half only of the exposed parietal peritoneum is incised in this wound, the upper portion being left intact for the insertion of the sutures by which it is proposed to elevate and fix the displaced stomach. This organ having been raised from the lower part of the abdomen and placed in its normal position, the pylorus and the lesser curvature are fixed to the abdominal wall in the following manner: A suture of fine silk is passed under the serous and muscular coats of the pyloric portion of the stomach along an extent of about a quarter of an inch; the needle and suture are next passed through the adjacent portion of exposed parietal peritoneum, from behind forwards, carried across the front of this membrane for about a quarter of an inch, and next passed backwards into the abdominal cavity. By carrying the sutures alternately through the coats of the stomach and the parietal peritoneum three

or four times, a large surface of the anterior gastric wall may be brought into wide and close contact with the anterior abdominal wall. The external wound is finally closed by three rows of sutures. The real value of this operation, it is pointed out, can only be proved by extended and varied experience.

Gastropexy will doubtless be a rare operation, as Glenard's disease (ptosis of the stomach in a severe form) is not of frequent occurrence. In a case complicated with marked displacement of the mass of intestine it would be easy to associate with the operation on the stomach an enteropexy of the transverse colon or of the small intestine by stitching up a fold of the elongated mesentery. Operations for fixing by sutures displaced and "floating" organs are not very serious, and claim credit for the cure of obstinate displacement of abdominal viscera, both solid and hollow, and, if properly performed, are likely to remove very troublesome afflictions and to afford positive and permanent benefit.—*British Medical Journal*, July 25, 1896.

THE OPERATIVE TREATMENT OF JACKSONIAN AND FOCAL EPILEPSY.

NANCREDE (*Annals of Surgery*, August, 1896) appends to a scholarly paper on this subject the following conclusions:

1. Removal of the discharging lesion in cortical and Jacksonian epilepsy can only be regarded as palliative, the operative scar in all instances thus far accessible to the writer becoming a new source of irritation.

2. The earlier the operation is done after the disease becomes fully established, the longer will the immunity last, and it is possible that if trephining is done very early the operation may in a few instances prove curative, especially if any reliable method can be devised to lessen the extent of the inevitable scar and adhesions between the brain and the membranes.

3. Operation is not so dangerous in competent hands as to forbid our urging trephining in this class of epilepsies, especially when done early, because the chance of prolonged immunity is great, and the fits are apt to be lighter and to recur at greater intervals after relapse than before trephining.

4. Removal of the discharging lesion is imperatively demanded as a life-saving measure in those rare cases where the intervals between the fits are so short that the paroxysms are practically continuous.

5. In all cases, but especially those characterized by frequent paroxysms, it is an error in practice to permit the early resumption of work, particularly manual labor. Thus, the writer calls attention to two cases where he trephined for ordinary traumatic epilepsy; one remained perfectly well for nearly two years, until, on attempting to lift a heavy weight, the encephalon became suddenly congested; the patient at once had a fit, since when the convulsions have been nearly as frequent as they were before operation.

6. Operation removes only one of the factors productive of epilepsy, but the ready response to inadequate stimuli still remains, and can only disappear, if ever, after a prolonged period; hence the necessity of careful avoidance of everything which can, either through the mind or body, excite sudden and severe acute cerebral congestion, undue or prolonged mental strain, or constant congestion of the nervous centres.

Reviews.

DISEASES OF THE EYE. A Hand-book of Ophthalmic Practice. For Students and Practitioners. By G. E. de Schweinitz, A.M., M.D., Professor of Ophthalmology in the Jefferson Medical College of Philadelphia. Illustrated with cuts and chromo-lithographs. Second Edition, thoroughly revised.
Philadelphia: W. B. Saunders, 1896.

Dr. de Schweinitz's book upon ophthalmology was first published in March, 1892, and a supplementary edition was printed two years later, so that this volume may be considered in one sense as being in reality the third edition of a book which has become deservedly popular in its special branch of medicine.

In this edition every page has been subjected to careful revision, and a number of special paragraphs upon such topics as filamentous keratitis, monocular diplopia, infiltration anesthesia, sterilization of collyria, symmetrical changes in the macula lutea in infancy, and a number of other subjects, have been introduced. The copious bibliography of the first edition has been done away with, and the space which it occupied has been devoted to the determination of corneal astigmatism with the ophthalmometer of Javal and Schiötz, and the rotations of the eye with the tropometer of Stevens.

Particular attention has been paid to the rewriting of the chapter upon operations, and forty illustrations have been added to the book. All of these pictures are unusually

good and the great majority of them are original, being taken from Dr. de Schweinitz's private practice or the rich material which he has the opportunity of studying in the various large hospital services which are under his care. It is a great advantage to any author, when endeavoring to write a book which shall prove useful to his fellow practitioners, to have opportunities for thorough study of disease processes; and the author's large private practice, combined with the unusual clinical facilities which are at his hand, show themselves in practical suggestions on almost every page of this book. Good as the first edition was, the second one is a marked improvement upon it and will doubtless prove an invaluable aid not only to ophthalmologists but to general practitioners who wish to add a certain amount of ophthalmic practice to their general work.

A PRACTICAL TREATISE ON MEDICAL DIAGNOSIS. For the Use of Students and Practitioners. By John H. Musser, M.D. Second Edition, thoroughly revised. Philadelphia and New York: Lea Bros. & Co., 1896.

To any one who is familiar with the personal skill and care which Dr. Musser exercises in his daily practice of medicine, it will be easy to imagine that this work embodies not only a careful consideration of the subjects which it discusses, but an accurate account of the methods which its author himself resorts to in the study of disease; and if personal success in the practice of medicine and in diagnosis is an indication of the value of the methods followed by the individual, surely the directions contained in this book will lead both the young and the old in medical practice to become skillful in this most important branch of medical study.

The first edition of Dr. Musser's work, which was published but little over two years ago, speedily attained for itself a position as a valuable text-book in many of the very best medical schools of this country, and its practical application to disease also caused many physicians engaged in active practice to purchase it.

Meantime the author has been enabled, by carrying his studies still further, to accumulate additional facts which he believes are of value to himself and his colleagues, and in this second edition he has not only incorporated these facts but has freely availed himself of the results of the experience of others in the same field.

Further than this, the illustrations in this second edition illustrate, even better than those in the first, the descriptions of disease which Dr. Musser gives in his text; and the colored plates and other drawings which the book contains are models of what illustrations in medical books should be.

A careful examination of the pages of the second edition of Dr. Musser's book shows that the author has not overlooked any important part or branch of diagnosis which could lend itself to the service of the general medical practitioner; there is scarcely a subject in connection with diagnosis which is not more or less thoroughly considered in some portion of the work. It can readily be understood, therefore, that the book is essentially practical and one to which the busy practitioner can turn with confidence whenever he may be puzzled in the diagnosis of a difficult case.

A PRACTICE OF MEDICINE. A Text-book for Practitioners and Students: with Special Reference to Diagnosis and Treatment. Illustrated. By James Tyson, M.D.
Philadelphia: P. Blakiston, Son & Co., 1896.

From the first to the last page of this large volume of nearly 1200 pages we find much to commend, almost nothing to criticise, and certainly nothing to contradict.

The volume opens with a graceful dedication to Professor J. M. Da Costa as an evidence of the author's appreciation of his position as an "accomplished physician, eminent teacher, and trusted consultant." The author tells us in his Preface that this work is the result of a purpose long since formed, and of labors covering several years. A perusal of its pages confirms the claim that the volume represents almost purely personal work, although it does not pretend to be based alone on the author's personal experience.

It is in the writing and preparation of a work of this character that Dr. Tyson stands pre-eminent. Those of the profession—and there are many at this time—who have been fortunate enough to have been his pupils during their medical student days, will remember that he brought to his lectures and to his writings an amount of industry and care which many other teachers failed to bring; and those who know him best as an author and teacher have expected that his book on the Practice of Medicine, when it appeared, would be a credit to himself and would increase his reputation as a medical author. This belief has proved correct.

In writing the various articles which compose this volume, Dr. Tyson has not only happily described the symptoms and pathology of disease, but has also used good

judgment in the amount of space which he has devoted to the discussion of the individual diseases. Again, while in the majority of instances where an important disease is considered a historical review opens the article, in no instance have we found this history burdensome or prolix. On the other hand, the historical facts briefly mentioned are those with which every practitioner should be familiar, and in one sense are quite as important to the medical man as are other facts concerning the etiology and pathology of the affection under discussion.

We notice in this volume what we think is a most useful innovation, namely, that Dr. Tyson in quoting authorities gives the full name of the writer, and thereby avoids the confusion which must arise in the medical literature of to-day when several persons possessing the same surname write upon the same or different topics. By this means each author receives full credit for any investigations he may have made.

We regret that in writing upon "Malarial Hematuria" scarcely a page has been devoted to this important and dangerous condition, and that so little satisfactory information is given concerning its treatment. Quinine is recommended, to the exclusion of every other remedy, but the text is not definite in stating as to whether it is to be used solely for the relief of the paroxysm of fever or for the cure of the hematuria. There are certain physicians, as we have pointed out before, men of wide experience, who insist most emphatically that quinine is contra-indicated in this condition.

Again, we think that section xv, containing a summary of symptoms following overdoses of poisons, might well have been dispensed with in a book of this character, although we recognize the fact that the author has followed several prominent medical authors in adding this chapter to his book. This chapter, as compared with the rest of the book, is by no means as complete, accurate and exhaustive as it should be; and the same criticism, so far as its scope is concerned, applies to the index, which in so valuable and exhaustive a volume should be much more complete.

These are practically the only criticisms which we would offer, and in conclusion we wish to commend this volume to our readers with the assurance that its purchase will place in their hands at once a scientific medical work and a practical and useful daily guide in the practice of medicine. We look forward to using this volume upon the "Practice of Medicine" more than any of the others which grace our library shelves, and they are many and all of them good.

THE PRACTICE OF MEDICINE. By Horatio C. Wood, A.M., M.D., LL.D., and Reginald H. Fitz, A.M., M.D. Philadelphia: The J. B. Lippincott Co., 1896.

This book, in its plan, as its title-page indicates, lies half-way between the text-book written by a single individual and the systematic compilations which have in recent years been so popular. The composition of the book is best explained in the language of the Preface, which we quote below:

"In offering this work to the medical public, the authors desire to state that the volume is the outcome of an attempt to view the practice of medicine simultaneously from the pathological and therapeutic points of view. Whilst each author has written certain determinate portions of the book, there have been such careful joint consideration and discussion of the various subjects that there is a common responsibility, except in the very few places where final difference of opinion is indicated in the text either over initials or by the use of the pronoun 'I' instead of 'we.'

"The section on nervous diseases, the articles on diseases of the muscles and on the various infectious diseases except diphtheria, dysentery, tuberculosis, leprosy, and syphilis, the chapter on acute and chronic poisoning, and all the therapeutics of the book, have been written by H. C. Wood. The remainder of the volume, namely, the articles on the infectious diseases above specified, the chapter on diseases of the blood and of the ductless glands, the chapter on parasites, and the sections on diseases of the circulatory, respiratory, digestive, and urinary systems, except the therapeutics, are from the pen of R. H. Fitz."

On looking through the volume, which contains nearly 1100 pages, including the index, we find that both authors have brought to their literary labors the ripe learning which original research and clinical work have yielded them. It is not necessary to state that when two recognized authorities collaborate in this manner, a book of very considerable merit must be the result, and it is rather for the reviewer to point out some of the peculiarities of the work than attempt to analyze the statements which it contains.

One of the first things that strikes the reader is the fact that the text is from beginning to end decidedly dogmatic in tone.

This is a great advantage to the student of medicine, but somewhat of a disadvantage to the practitioner of experience. On page 208, in the article on Pernicious Malarial Fever, the statement is made that in the neighborhood of Philadelphia pernicious fever offers a mixture of the symptoms of the algid and comatose types. We were not aware prior to reading this paragraph that pernicious fever ever occurred in the neighborhood of Philadelphia, except in those rare instances where individuals coming up from the South were seized with an attack shortly after their arrival; and we think that the statement quoted hardly gives a clear idea of the prevalence or severity of malarial poisoning in this neighborhood. It is interesting to note, too, that on one or two occasions the dogmatic expression of an idea by one author has led to the expression of an equally dogmatic but opposing statement by his collaborator. Thus on page 982 Dr. Wood is responsible for the statement that in sthenic peritonitis, without tendency to the formation of pus, calomel is a valuable remedy; and on page 980 the same writer also recommends that in peritonitis a large number of leeches should be applied, and free bleeding encouraged after their removal. On page 983, however, Dr. Fitz states, in contradiction of these views, that leeches are harmful and the cathartic effects of calomel to be avoided.

In regard to the use of purgatives in the treatment of peritonitis, we are glad to note that Dr. Fitz distinctly disapproves of the administration of such substances, particularly in peritonitis of the male, and suggests that the proper way to empty the large bowel, if such emptying is required, is by means of rectal injections. He also states that opium is to be given only in such quantities as will relieve pain, and that laxatives are to be avoided as long as there is any possibility of the alimentary canal being the source of any peritonitic symptoms.

In dealing with the treatment of typhoid fever, Dr. Wood reiterates the belief which he has so often heretofore expressed, that the practice of Dr. George B. Wood in administering turpentine is distinctly advantageous as a routine measure; but as Dr. Wood's initials are signed to this statement, it is to be presumed that he alone is responsible for it—in other words, that Dr. Fitz withholds approval.

We think it unfortunate that the illustrations in the book, such as Figs. 7, 8, and 9, are not better in quality. Except for these instances, the printing, paper and binding of the book are most excellent.

The volume closes with three pages of prescriptions, in which we recognize many favorite formulas of Dr. Wood. After this there are twelve charts showing the course of various febrile movements in disease, and an index of fifteen pages arranged in three columns to the page.

Further criticism of the text, as we have already stated, considering the fact that it is written by Drs. Wood and Fitz, is unnecessary. The book is a good one and will be received with satisfaction by the many members of the profession who are already so fond of reading the literary productions of either of the learned authors of the volume before us.

A TREATISE ON APPENDICITIS. By John B. Deaver, M.D. Containing thirty-two full-page plates and other illustrations.
Philadelphia: P. Blakiston, Son & Co., 1896.

This brochure is prompted, the author states, by the belief that the importance of appendicitis entitles it to a more thorough and exhaustive study than has usually heretofore been accorded it. The last paragraph of the book contains the statement that the author's attitude in the consideration of appendiceal surgery is the fruit, not of theoretical deductions, but of that best of teachers, experience. We therefore naturally expect the best systematic study upon appendicitis that has yet appeared, and a series of original observations and conclusions founded upon practical work. In both these respects we have been disappointed.

The first part of the work, dealing with the history, anatomy and pathology of appendicitis, is a repetition of what has before been written and rewritten, but it does not possess the merit of even more careful systematization. Talamon, Hawkins, Sonnenberg, Fowler —indeed, the list could be considerably extended—have offered contributions to the knowledge of appendicitis which from every point of view are more thorough, comprehensive and valuable than those found in this volume. The symptoms are, for a thorough study, passed over with extraordinary rapidity.

The general practitioner will appreciate the practical value of this work when he learns that a very nearly equal space is given to the differential diagnosis between appendicitis and hip-joint disease, and appendicitis and enterocolitis. It is true that the differentiation is much easier in the former case than in the latter, but to the doctor who uses

his book as a source of help this will not be satisfactory.

The implication found on page 102 that it is possible to diagnose ureteral epithelium as such by the microscope, shows a touching faith in the teachings of the past which is not likely to mislead at the present day.

Under Treatment, the author states that a few cases will recover from the disease without operation. He implies that the number of these cases is 16 in 400—in other words, four per cent. Unless this is a piece of veiled humor, it shows little respect for the common sense and experience of the every-day practitioner.

A few cases are quoted, and we are told that in fifty cases of primary attacks of appendicitis thirty-five were operated on within seventy-two hours, and seven died, a mortality of twenty per cent.; fifteen cases were operated on between the third and ninth day, and five died, a mortality of thirty-three per cent.

The operative technique, the after-treatment, the complications, the sequelæ, are found noted about as fully as in the ordinary surgical text-books. The attitude which experience has taught the author seems very like that portrayed by most writers on the subject.

On page 153 is reported one case "to show the prevalence of pylophlebitis and liver abscess as sequelæ of appendicitis."

The work is well illustrated with a number of florid colored plates and excellent halftones. The exact reason for its existence, however, remains a mystery, since it represents neither a thorough and exhaustive study of literature nor even a superficial summarization of clinical experience, and being somewhat diffuse is scarcely suited for use as a text-book.

A Vest Pocket Medical Dictionary. By Albert H. Buck, M.D.
New York: William Wood & Co., 1896.

This book is really of vest-pocket size, and will no doubt prove of very great use to students beginning the study of medicine. The author has used many standard works in its preparation, and has embodied all the terms which he believes are commonly employed in medicine. The great difficulty with the ordinary students' dictionary is that it is too large for him to carry to his lectures, and therefore he is inclined to ignore its usefulness. With the possibility of carrying this little volume in his pocket without inconvenience, a clear idea of much that would otherwise be unintelligible to him can be obtained by the youngest tyro in medical study. Considering the size of the volume, the print is unusually clear and the definitions very full.

A Text-book of Materia Medica, Therapeutics, and Pharmacology. By George Frank Butler, M.D., Ph.G.
Philadelphia: W. B. Saunders, 1896.

The first forty pages of this book are devoted to a consideration of the classification, administration and definition of medicines, and weights and measures. The next eighty-seven pages are consumed in describing pharmaceutical preparations, and the remainder of the book is devoted to "disease medicines," "antiseptics," "symptom medicines," and "topical remedies." Under "symptom medicines" we find cathartics, diuretics, cardiac stimulants and depressants, and similar classes of drugs—for what reason is not clear. Such a classification has no scientific or clinical basis, nor does it lend itself to ready reference or to fixing the action of a drug in the mind of the student. If an emmenagogue is a "symptom remedy," a hematic is not a "disease remedy," for hematics are used to control anemia, and anemia is a symptom. In the preface of the book it is stated that much of the information in the following pages is taken from the National Dispensatory and the United States Pharmacopœia; and indeed, in some places the wording is varied just enough to avoid an infringement of copyright. We recognize many familiar descriptions, definitions and therapeutic hints taken from well known books, in words so close to the originals that we are surprised that credit is not given to the authors more frequently.

In looking over the pages of the book we meet with many errors in statements concerning the character or action of certain drugs. Thus, it is certainly a mistake to say that an oxytocic or ecbolic is an agent employed to contract the womb during *pregnancy;* neither do astringents, through constipating action, limit the intestinal secretions—quite the reverse. Again, we are told on page 215 that quinine is peculiarly useful in "the periodical affections due to paludal miasm," "among these disorders being neuralgias, headache, asthma, hay fever, chorea, jaundice, diarrhea and dysentery, etc." Some of these affections are certainly not truly periodic, neither are they due to a paludal miasm. So far as we know, quinine injected into the buttocks, unless it enters a vein, does not depress the

heart; and it is certainly not good advice to recommend the use of quinine on an empty stomach (page 217), without any qualifying advice. The bald statement that mercuric chloride is useful in diphtheria gives no idea of how the drug should be used in this disease.

A curious omission is made in making no mention of the use of arsenic in the treatment of chorea, and no directions or warnings are given as to the use of colchicum in gout. We do not believe that arsenic is ever as useful as quinine in intermittent fever (page 242). On page 524, nitrite of amyl is said to produce a rapid pulse "due to depression of the vagi and the *removal of inhibition* from the *low arterial tension.*" What this means we do not know. The statement that the bromides are rapidly eliminated is not generally accepted as correct. Nothing is said of the therapeutics of veratrum viride except that this drug can be used for the same purposes as aconite (page 584), which is certainly incorrect; its use in eclampsia is ignored, and for some curious reason the actions of jervine, veratroidine and veratrine are all considered together, as if they represented one drug instead of two, although the writer tells us that they represent two different drugs. We are told on page 602 that emetics are used to relax the muscles of the pharynx in laryngeal spasm, and the positive statement is made that lobelia has no effect on the motor nerves, when as a matter of fact it produces its paralysis by acting on these nerves. Finally, the attempt to make two indexes into one by printing certain figures in heavy-faced type and others in light-faced is not consistently adhered to, as for example in the case of digitalis.

The criticisms we have made are not in the form of a general assertion (so easy to make) that the book is badly written, but they are specific, for two reasons: first, because it is unfair to condemn a book without naming some of the sins of commission and omission; and secondly, because when they are pointed out to him the author can correct them in future editions.

A SYSTEM OF DISEASES OF THE EYE. By American, British, Dutch, French, German and Spanish Authors. Edited by William F. Norris, A.M., M.D., and Charles A. Oliver, A.M., M.D., Philadelphia. Volume I: The Embryology, Anatomy, and Physiology of the Eye. Copiously illustrated, with plates and engravings. Philadelphia: The J. B. Lippincott Co., 1896.

This System of Diseases of the Eye is a fit contribution, on the part of two well known American ophthalmologists, to the literature of their specialty at the close of a century which has not only been wonderful in its advances along the whole line of medicine, but has been particularly noteworthy in the additions which have been made to our knowledge of ophthalmic anatomy and disease. We are informed that three other volumes, dealing more particularly with variations from the normal in human eyes, are to rapidly succeed this first volume, which is devoted to the embryology, anatomy, and physiology of the eye.

The book opens with an exceedingly useful and interesting chapter by the late Dr. Ryder, upon the Development of the Eye, which is followed by two anatomical chapters —one by Dr. Dwight, of Harvard, upon the Orbit and Appendages of the Eye, and the other upon the Anatomy of the Eyeball and the Intra-orbital Position of the Optic Nerve, by Dr. Baker, of Washington.

The chapter upon Microscopical Anatomy of the Eye follows next, by Dr. Piersol, of Philadelphia, and it goes without saying that Dr. Piersol has brought to its preparation an amount of skill as a writer and as a histological investigator which is probably unequaled on this side of the Atlantic.

The Anatomy of the Intra-cranial Portion of the Visual Apparatus is by Dr. Alexander Hill, of Cambridge, England; that upon Congenital Malformations and Abnormalities of the Human Eye, by William Lang, of London, and E. Treacher Collins. We regret to say that this latter chapter is the poorest in the volume.

Dr. Edward Jackson, of Philadelphia, writes upon the Dioptrics of the Eye; and then follows a chapter upon the Perception of Light, by Dr. J. McKeen Cattell.

Dr. Brodhun, of Berlin, writes upon Binocular Vision, Conflict of the Fields of Vision, Apparent and Natural Size of Objects, etc., and after his article comes a most interesting and scientific production from the pens of Dr. William Thomson and Dr. Carl Weiland, the first of whom is known as an able pioneer in the study of this particular branch of vision, while his assistant is recognized as being one of the most scientific of the younger ophthalmologists of the day.

The final chapter, upon the Photo-chemistry of the Retina, by Carl Mays of Heidelberg, is a valuable one.

After a careful examination of the volume we confess that we hardly know which part to praise the most highly. As we have said, no portion of the work deals with the practical

application of therapeutics to eye diseases, yet almost every page if well studied will prepare the practicing ophthalmologist for the application of many suggestions which must follow in subsequent volumes. This volume contains the material which must form the foundation walls of every ophthalmic surgeon's daily routine, and both the editors and various authors have succeeded in building these walls with such beautiful symmetry and with such accurate measurement of statement that they can be depended upon for many years to come. Even to those physicians who do not devote themselves to ophthalmology, such a volume as this must necessarily prove stimulating to their ideas of scientific medicine, and it will show those who are hastening and rushing into print what careful literary work really is. If the contributors to the subsequent volumes are as thorough and successful as the contributors to the first volume, this System of Diseases of the Eye will not only mark an epoch in the end of the nineteenth century, as we have stated, but for many years in the twentieth century it must remain a standard book of reference for all medical men.

THE MEDICAL NEWS VISITING LIST FOR 1897. Weekly (dated, for 30 patients); Monthly (undated, for 120 patients per month); Perpetual (undated, for 30 patients weekly per year); and Perpetual (undated, for 60 patients weekly per year). Each style in one wallet-shaped book, with pocket, pencil and rubber.
Philadelphia and New York: Lea Brothers & Co., 1897.

The Medical News Visiting List for 1897 has been thoroughly revised and brought up to date in every respect. The text portion (32 pages) contains the most useful data for the physician and surgeon, including an alphabetical Table of Diseases, with the most approved Remedies, and a Table of Doses. It also contains sections on Examination of Urine, Artificial Respiration, Incompatibles, Poisons and Antidotes, Diagnostic Table of Eruptive Fevers, and the Ligation of Arteries. The classified blanks (160 pages) are arranged to hold records of all kinds of professional work, with memoranda and accounts. The selection of material in the text portion and the arrangement of the record blanks are the result of twelve years of experience and special study. Equal care has been bestowed upon the mechanical execution of the book, and, in quality of paper and in strength and beauty of binding, nothing seems to be left wanting. When desired, a Ready Reference Thumb-letter Index is furnished, which is peculiar to this Visiting List, and which will save many-fold its small cost (25 cents) in the economy of time effected during a year. In its several styles The Medical News Visiting List adapts itself to any system of keeping professional accounts.

OVER THE HOOKAH; OR, TALES OF A TALKATIVE DOCTOR. By G. Frank Lydston, M.D. Illustrated.
Chicago: Fred. Klein Co., 1896.

There is probably no one in Chicago in the medical profession more facile with his pen or more active in his medical and social life than the writer of this volume. Indeed, this book may be considered as a sort of ebullition of his never-failing fun and good-humored *badinage*. It is not devoted to scientific medicine, but to semi-medical gossip and stories told by the Doctor to a young student friend; and it is cleverly done. Our only regret is that the author did not put the energy spent in the writing of this work into one of the exhaustive papers he sometimes writes, and thereby make for himself a more enduring monument. However, this book doubtless represents the amusement of many hours when he was resting from professional labor.

It illustrates Western dialect very well, and in its rougher passages reiterates the language and the ideas of the real characters one meets in the life described. We hope the work will be the success that Dr. Lydston deserves.

THE PHYSICIAN'S VISITING LIST (LINDSAY & BLAKISTON'S) FOR 1897. Forty-sixth year of publication.
Philadelphia: P. Blakiston, Son & Company, 1897.

This popular and well known list for keeping a temporary record of professional work has once again made its appearance with the approach of the new year. Several minor improvements have been made in it, but it was already so good that great improvements were not possible. It is well worthy of purchase, and every physician should use some such handy record of his visits and professional services. Its price is $1.00 for 25 patients a week, and $2.25 for 100 patients a week.

THE MEDICAL RECORD VISITING LIST, OR PHYSICIAN'S DIARY FOR 1897. New, Revised, Edition.
New York: William Wood & Co., 1897.

This visiting list is slightly more bulky than the preceding one and therefore has room for more data in its earlier pages, and these its publishers have thought it wise to fill with tables of dosage and cognate information. It also is so well known to the profession as not to need a description.

Correspondence.

LONDON LETTER.

By St. Clair Thomson, M.D., M.R.C.P., F.R.C.S.

The elections for what has been called the Doctors' Parliament will be coming on soon. The various Royal colleges, halls and universities which have the power of granting diplomas or degrees to practice medicine, send representatives to a central body called the Medical Council. Of this—the "Doctors' Parliament"—there are thirty members. Twenty seats are held by the representatives of the corporate institutions above referred to; five are appointed by the Crown; and the remaining five seats are allotted to members who are returned by the individual members of the profession. Every member of the profession who is "on the register"—*i.e.*, who has attended at least one out of a certain number of recognized diploma-granting institutions—has five votes. As there are some 30,000 registered practitioners, it will be seen at once that the profession is in a very small minority on the Medical Council, and that the vested interests of the colleges and halls can still have it all their own way. Yet, strange as this must appear in this age of democracy, it is still stranger to remember that not so many years ago the profession had no direct representatives whatsoever! We were then treated like schoolboys who could not be expected to know what was good for them, and we had to take what the representatives of College and Crown gave us. According to many, they gave us little beyond an increase of the stripes our fathers had borne. In other words, they lengthened the curriculum, increased the severity of examinations, but left the method of teaching and examination in the old ruts; hunted down any registered practitioner who was guilty of frank, flagrant advertising, while the more subtle methods of the "fashionable physician" passed unnoticed. However, the profession has now its five "direct representatives," as they are termed, and is clamoring for more. Consequently, of the thirteen candidates for the five seats, many pledge themselves to agitate in this direction. Their election addresses are full of other burning questions of the hour, all of too local interest to dilate upon here, but interesting as indicating the increased severity of the struggle for existence, and an awakening on the part of the profession to the need of union and protection.

The evening papers, always athirst for the sensational, have had lately on their posters large notices of the "Doctor and the Nurse." This referred to an instructive trial which has just closed. A hospital nurse consulted Dr. Cullingworth, the obstetric physician of St. Thomas's Hospital, and he recommended an operation. At this operation he found both ovaries diseased, and, believing that he had made the patient understand that his discretion was unfettered in the matter, he removed both of them. On recovering from the operation the patient was very wroth at this, asserting that she had only given her consent to one ovary being removed, and charging the doctor with not only acting against her wish, but with removing a healthy ovary. She had in consequence, she claimed, lost a prospective husband and suffered in her profession as a nurse. The judge, though at first apparently disinclined to do so, allowed evidence as to the condition of the second ovary. But the chief point of contention was as to whether or not the patient had given her consent; this she had never done in writing, and although she had on occasions said to Dr. Cullingworth that he was not to remove the second ovary, he had always declined to allow himself to be fettered in doing what he thought right when the abdomen should be opened. The evidence turned so decidedly in his favor that the jury stopped the case, and the judge fully concurred in dismissing the charge. The moral of this is that patients should trust their doctors all in all, or not at all; and that where there is any doubt as to what may be discovered in the course of an operation, the medical man should safeguard himself by securing beforehand the consent of the patient in writing, or verbally in the presence of reliable witnesses, so that he may act as he thinks best under the circumstances which may arise.

The opinions of one of our highest judges are worth quoting on the subject of vivisection. The other day Lord Justice Lindley said: "Those who would repeal the legislation on this subject are taking upon themselves a fearful responsibility. There is much to be said on both sides; but to me it is a matter of weighing human life against animal life, and judgment will always be in favor of the human being." On another matter which has recently been discussed he was also emphatic: long experience had made him shy of universal propositions, but in his opinion a medical man not only failed in his duty to his patient, but was an idiot and a fool, if he

disclosed secrets entrusted to him in his professional capacity, unless he was able to justify that course of conduct.

Fifty years ago our Pathological Society was founded, and it is indeed strange to read now that in those days a young man was warned from having too much to do with it, lest men should come to think he had no interest in surgery! The Society has just been celebrating its jubilee, and its President, Mr. Butlin, gave an address containing many suggestive observations. He pointed out that the Society seemed indeed to have fulfilled its mission, viz., that of arousing attention to the necessity of the study of morbid processes, and of serving as a pathological school where men in practice could still keep in touch with the work being done in the post-mortem room. That the climax of its prosperity had been reached was indicated by the smaller average attendance of members at its meetings, the smaller size of its printed transactions, and the fewer applicants for membership. This change he attributed to the specialization which has taken place in pathology in the last ten or fifteen years. With the development of experimental pathology and bacteriology it was to be observed that the results obtained by these new branches could only be understood by those who had been specially trained, whereas any member was capable of taking an interest in a morbid specimen. As a remedy to this condition he suggested the institution of pathological laboratories in close association with the wards, where the more technical work of the laboratory might keep in touch with the clinical side of the question in the wards. This arrangement is almost universal in Germany, Italy, and France, and to a less degree in America, but here we are threatened with a divorce between the clinician and the "pure pathologist," and such a separation would be much deplored. When instancing how tardy is sometimes the acceptation and practical application of some pathological novelty, Mr. Butlin compared the rapid adoption of Pasteur's work by vine-growers and brewers, with the tardy adoption—nay, even, the denial and opposition—of Lister's principles. So, too, with regard to Heidenhain's researches on the anatomical course of cancer of the breast; Mr. Butlin said that, so far as he was aware, only one surgeon had deliberately designed his operation on the information afforded by Dr. Heidenhain—Dr. William Halsted, of the Johns Hopkins Hospital, who had published results far superior to those of any other surgeon.

Compared with the above statement of the inevitable tendency in the study of pathology, it is curious to read that at the College of Physicians there was opposition to a proposal to introduce bacteriology as a subject for study and examination. Of course it was chiefly on the very sound plea that the student is already overwhelmed with work; but surely his load might be lightened to make room for a subject which is increasing daily in practical importance. As it is, the student has still to go through the old farce of "spotting pickles in bottles," as he irreverently terms what his seniors are pleased to call an examination in pathology.

A gentleman in Scotland in some way connected with the majesty of the law—they call him Sheriff-Substitute Campbell Smith—has been gaining notoriety in the dirty town of Dundee. Many people are apt to refer to it as "bonnie Dundee," not knowing that this title was reserved for Claverhouse, who took his title from the town; "dirty Dundee" is more applicable. The sanitary authorities wished to condemn some old houses as unfit for human habitation, but the case was carried on appeal before the above-mentioned Sheriff-Substitute, who saw no reason to condemn the buildings, and then delivered himself in this delightfully archaic manner: "Most of the structural defects have existed from its completion as a house, and it seems strange that it has taken three hundred years to discover that it is not a house fit to live in. How often its inhabitants have been cleared out with plague, fever, and cholera, is not told. . . . A town councillor . . . did not die in it, but whether he did die where and when he did because he had lived in it too long, or because he had left it and gone to some flimsy overventilated modern villa, I do not pretend to say, much less to know, for the agencies that kill a man are, as a rule, discovered by scientific theorists only after it is too late. . . . It is very generally asserted that cleanliness is next to godliness, but this is very far from being my creed, legal or moral. . . . I am determinedly of opinion that common honesty is much nearer godliness than that cleanliness which can be obtained by the free use of soap and water, or of water without soap. . . . What harm did it do to Athens that Diogenes lived in a tub or some hutch not fit for a modern fashionable dog? He is said to have lived for ninety years, and that is an age few sanitarian fanatics are ever likely to see, for they are doomed victims of life-depressing

but it is printed in the Transactions, which are to be found in every medical library in the world; it receives a sort of hall-mark of reliability, a liberal amount of excellently printed reprints are given, and it is quoted in all the medical journals. The Transactions embody a large, if not the chief, part of the progress of British medicine. In the very first volume there is a paper by Edward Jenner; while subsequent ones contain articles by Hodgkin, Bright, George Johnson, Gull, Spencer Wells, Garrod, and others whose names will endure. It is curious to read that when the Society was founded, nearly a century ago, disputation was discouraged because of the warmth which was apt to accompany it! Now we are all so sensitive as to one another's feelings that debate is rather apt to languish. The competition of the various special societies has also acted of late in diminishing the attendance at the meetings. Many efforts have been made lately to make the "Medico-Chi" march with the times, and even to infuse a more social element into it by an annual dinner. Still, signs are not wanting that the older societies are suffering from the results of specialization; I have often, for instance, seen a much larger attendance at the Laryngological Society, and much more interested debates, than at the Medico-Chi. I think this is bound to go on unless the dozen or more of London medical societies can be induced to fuse themselves into one large Academy of Medicine, with its various sections. This was a design of the late Sir Andrew Clark, and if he had lived we might have seen it accomplished. Now the scheme is hung up, awaiting the arrival of the one strong man to realize it.

Mr. Pridgin Teale, who is a well known sanitarian as well as a noted surgeon in Leeds, has been giving an address on how medical men should take care of their own health. He holds that two good meals and one moderate one are enough for most healthy men leading an active life. Wines may be mixed —at meals—provided they are good and we do not take too much of them. Three hundred and sixty-five glasses of whiskey per annum, taken at bedtime, are a needlessly severe tax on the liver when its work is in full swing. The cheapest of all luxuries is a fire in one's dressing-room and a hot bath-towel. With a well arranged room and a well contrived fireplace most people can learn to sleep with their windows open winter and summer. With regard to fireplaces, Mr. Teale himself has designed an open slow-combustion grate which is now so extensively adopted in this country that a "Teale back" is almost universal in our open fireplaces.

The most remote spot of the "British Isles" is the small island of St. Kilda, forty miles from the mainland, to the west of the outer Hebrides. A melancholy interest attaches to the island from a medical point of view, and this is "the scourge of St. Kilda," or the "eight-day sickness," which carries away something like sixty-seven per cent. of the children born on the island. This is simply tetanus neonatorum, and in the light of our modern bacteriological knowledge it is strange to read of the mystery and awe with which this "scourge" has been regarded. There is no physician on the island (the inhabitants only number about seventy), but lately a Glasgow medical man instructed the minister of St. Kilda in some of the principles of antiseptics and their application to the umbilical cord. As a result the five children since born on the spot are now alive and well, and the "scourge" promises to become as extinct as other zymotic diseases must in time.

PARIS LETTER.

By Arthur R. Turner, M.D. (Paris).

Dr. Balzer, of the Hôpital du Midi, to which Ricord was attached during his life, stated at the recent Congress of Dermatology held in London that he had treated with success by means of continuous irrigations soft chancres which for months had resisted every other form of treatment. The solution used was a warm one of potassium permanganate.

A vessel containing ten liters of a 1:1000 solution of potassium permanganate heated above 40° C. is connected with a small tube, the extremity of which rests upon the ulcer. The liquid is allowed to run at such a rate that this amount lasts from two to three hours, its temperature being kept as even as possible. Towards the end of the session the strength of the solution may be raised to 1:500.

Dr. Balzer called special attention to the superiority of such continuous irrigation over simple bathing.

Professor Jaccoud, in a recent clinic, called attention to the advisability of avoiding the use of salicylates in cases of acute rheumatic fever with visceral complications.

In such cases, where either endocarditis, or pleurisy, or cerebral complications, are

present, he considers the use of the salicylates as injurious.

What he recommends is tartar emetic in rather large doses. To the average adult he would give about forty centigrammes of tartar emetic, without opium. Usually the temperature falls the following day, and though it may rise again the day after, it falls once more on the third day and usually definitely.

The editors of *La Médecine Moderne*, whose enterprise in founding a medical reading-room I spoke of some time ago, have carried out in their paper an innovation which is likely to be appreciated especially by foreign physicians or medical students visiting Paris. In every issue of their paper they give a list of all the lectures, demonstrations or clinics to be held day by day in the various hospitals or establishments in Paris. This does away with the need of consulting and remembering the notices placed around in various parts of the city, which were too often forgotten just when most needed.

The customary mode of irrigating the nostrils and naso-pharynx is by Weber's method, namely, introducing into one nostril the extremity of the tube through which the liquid used flows, passing up on one side and out by the other nostril. This method, according to Dr. Rattel of Paris, should be condemned. It is both dangerous and inefficient. It is inefficient because when the liquid is allowed to run freely, the latter passes up the lower meatus, is reflected from a point of the naso-pharynx, and passes out through the inferior meatus of the opposite side. Thus the upper portion of the nasal fossæ and almost the entire naso-pharynx are practically untouched by the liquid. It is dangerous when in order to obtain a sufficient irrigation the free nostril is closed, for thus the liquid used is forced into the Eustachian tube.

Dr. Rattel advises the use of a retro-nasal sound. Such retro-nasal irrigations are easily carried out, on account of the insensibility of the naso-pharynx.

The retro-nasal sound consists of a metal tube, about twenty centimeters in length, and curved at either extremity. One end is enlarged and rounded in form, and is destined for introduction into the naso-pharynx. The rounded extremity is pierced with a number of holes. The other extremity of the sound communicates by means of a rubber tube, through which the liquid used is introduced, with the vessel containing the latter.

The tube should be introduced into the naso pharynx so that the rounded extremity at its end looks forward. The liquid is forced out through the holes in it in the form of a fine spray which eventually runs down the nasal fossæ, the head being inclined slightly forward, and leaves the nostrils in a double jet. The extreme division of the jet used prevents any penetration of liquid into the Eustachian tube, and the closure of the posterior pillars of the fauces in the form of a sphincter around the tube acts in the same way with reference to the larynx.

At a recent meeting of the Medical Society of the Hospitals of Paris, Dr. Rendu gave an account of three cases of lead poisoning of singular origin. A young man, his sister, and the latter's little boy went for their holidays to Normandy, where cider is the customary drink. The young man first, soon followed by his sister, suffered from lead-colic, while the child showed a condition of anemia which was unaccountable. The latter, it should be said, drank but little cider. The treatment of the local physicians consisted in purgatives, with temporary good results, but frequent relapses. Notwithstanding the absence of any line on the gums, Dr. Rendu suspected lead poisoning, and on investigation discovered that the cider drunk by the family had been kept in recently tinned vessels. Dr. Rendu called attention to the fact that a sudden aggravation in the condition of the young man was apparent after partaking of sorrel soup, which by its acidity facilitated the absorption of the lead.

France is known as a country of many regulations. It may be interesting to learn what formalities must be accomplished in order to obtain permission to have a body cremated:

1. A request, on stamped paper of the value of 60 centimes (12 cents), must be submitted to the mayor, for permission for the cremation.

2. A certificate, likewise on stamped paper, must be obtained from the attending physician, certifying that the death is due to natural causes, and naming the disease.

3. The above document must be submitted to the commissary of police for the legalization of the physician's signature.

4. A certificate must be obtained from the State physician approving the certificate given by the attending physician.

5. Visit to the mayor's office with the above certificates in order to obtain the mayor's permission.

6. Visit, with the mayor's permission, to the prefecture of police to obtain a visa, and

three permissions to remove the body—one for the mayor, one for the public undertaker, and one for the Père-Lachaise Cemetery, where the cremation is performed.

7. Visit to the prefecture of police in order to agree to the date and hour of the ceremony.

8. Visit to the public undertaker's office in order to arrange for the transportation of the body, and for the payment of the fees.

9. On arrival at the cemetery, delivery to the guardian of the permissions of the mayor and prefecture of police.

10. After the cremation, second visit to the head guardian of the cemetery in order to pay the dues of 100 francs 25 centimes.

The following ointment is strongly recommended by Dr. Monin, of Paris, in cases of hemorrhoids:

Camphorated lanolin, 40 grammes;
Castor oil, 10 grammes;
White precipitate of mercury, 5 grammes;
Conium bromhydrate, 2 grammes.

THE USE OF ICE-CREAM AS NOURISHMENT IN PHARYNGEAL PARALYSIS.

To the Editor of the THERAPEUTIC GAZETTE.

I wish to ask physicians who may have to treat paralysis of deglutition, to try feeding ice-cream straight or containing other nutriment, as in the following and only case in which I have tried it.

A few weeks ago, in the case of a lad of fifteen, I was confronted with the most general and distressing neuritis and paralysis that I have ever seen, more or less involving, as far as I could determine, all the muscles save the sphincters and those of the orbits and palpebræ. Before me was a patient greatly debilitated at the end of a six weeks' attack of typhoid fever, so paralyzed that he could not swallow, speak, or raise one of his limbs; nor could he turn his head from side to side. For days respiration varied from 25 to 54, and was characterized by distressing paroxysms of smothering requiring the constant use of the fan day and night. His limbs were bathed much of the time in cold sweat. His pulse varied between 108 and 140, with frequent attacks of syncope, even when lying on his back with his head low. Add to all of this such paralysis of deglutition that even a teaspoonful of milk or water would not be swallowed, but returned through his nose. The stomach-tube was used, but had to be abandoned because it increased the already dangerous attacks of syncope and dyspnea. Rectal alimentation was of service, but it was feared that it alone was insufficient in such an emergency. What was I to do? What could I do? Luckily I thought of what I had frequently observed, viz., that ice is more easily swallowed than other things; which thought suggested feeding him with ice-cream. Being more convenient, crushed ice was first tried: he swallowed it, but with some difficulty. Ice-cream was soon procured, and was swallowed even better. For ten days this was his only aliment, except a few enemas containing milk and egg. About the fifth day cracker-dust was incorporated before freezing. By the tenth day of this feeding he could swallow milk, after which his deglutition improved so rapidly that ice-cream was soon discontinued. Under massage, electricity, strychnine, and other tonics, he is improving in all respects.

I account for the difference between swallowing ice-cream and other kinds of food, by the contraction of muscles which contact with cold produces. If this theory is correct, may not it be an aid to electricity in restoring paralyzed muscles? The fact that while ice-cream was being eaten deglutition improved more rapidly than other functions is perhaps confirmatory. This was not thought of while ice was convenient, or it would have been tried.

CHAS. H. CARGILE, M.D.

BENTONVILLE, ARKANSAS.

LACTIC ACID FOR SUMMER DIARRHEA IN CHILDREN.

To the Editor of the THERAPEUTIC GAZETTE.

DEAR SIR: In your October number, under "The Treatment of Cholera Morbus," you quote from the *Journal des Praticiens* of May in support of the administration of lactic acid.

During the hot weather of last summer I treated between sixty and seventy cases of "summer diarrhea" in children ranging in age from a few weeks to three years. The cases were in every way such as are met with in the crowded tenements of large cities during the heated term. I used lactic acid in every case. The maximum dose was one grain and a quarter, given every hour. The result was the disappearance of all symptoms in from twenty-four to forty-eight hours. The only medicine given besides the lactic acid was an initial dose of calomel in cases where it was indicated.

F. J. BOWLES.

NEW YORK.

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